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TITLE: OVERALL PROJECT PERFORMANCE ASSESSMENT IN PUBLIC BUILDING CONSTRUCTION PROJECTS

(THE CASE OF ADOLA WOYU TOWN)

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APPROVAL SHEET

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THESIS SUBMISSION APPROVAL SHEET

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ABSTRACT

Public building construction projects play a critical role in socio-economic development by providing essential infrastructure for education, healthcare, and governance. However, in many developing countries, including Ethiopia, such projects frequently experience time delays, cost overruns, and quality deficiencies, which undermine public trust and development outcomes. This study was conducted to assess the performance of public building construction projects in Adola Woyu Town, with particular emphasis on time, cost, and quality compliance, as well as the factors influencing performance and stakeholder satisfaction. A mixed-methods research design was employed to achieve the study objectives. Quantitative data were collected from project records, audits, and structured questionnaires administered to key stakeholders involved in public building projects implemented between 2018 and 2023. Qualitative data were gathered through interviews and focus group discussions to capture contextual, institutional, and managerial challenges affecting project performance. The collected data were analyzed using descriptive and inferential statistical techniques supported by SPSS, alongside thematic analysis for qualitative findings. The results reveal that a significant proportion of public building construction projects in Adola Woyu Town failed to meet planned schedules and budgets, with moderate to severe delays and cost overruns being common. Quality performance was also found to be inconsistent, with recurring non-compliance related to workmanship, material standards, and supervision. Institutional weaknesses, resource constraints, and managerial inefficiencies were identified as the dominant factors contributing to poor performance. Furthermore, the analysis demonstrated a strong relationship between project performance and stakeholder satisfaction, indicating that delays, cost overruns, and quality issues directly reduce community and client satisfaction. The study concludes that improving the performance of public building construction projects in Adola Woyu Town requires integrated institutional, managerial, and technical interventions. Strengthening regulatory enforcement, enhancing contractor and consultant capacity, improving resource planning, and promoting transparent stakeholder engagement are essential. The findings provide evidence-based insights for policymakers, practitioners, and local authorities to enhance the efficiency, accountability, and sustainability of public construction projects in small urbanizing towns in Ethiopia.

Keywords: **Public building construction projects; project performance assessment; time delay; cost overrun; quality compliance; mixed-methods approach**

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ACRONYMS

ADWA	**Adola Woyu Administration**
CSA	**Central Statistical Agency**
ECWRA	**Ethiopian Construction Works Regulatory Authority**
FDRE	**Federal Democratic Republic of Ethiopia**
GTP	**Growth and Transformation Plan**
HSE	**Health, Safety, and Environment**
KPI	**Key Performance Indicator**
NCR	**Non-Conformance Report**
PMBOK	**Project Management Body of Knowledge**
PMI	**Project Management Institute**
QA/QC	**Quality Assurance / Quality Control**
SPSS	**Statistical Package for the Social Sciences**
VRIN	**Valuable, Rare, Inimitable, and Non-substitutable (resource framework)**

CHAPTER ONE

1. INTRODUCTION

Public building construction projects are crucial drivers of socio-economic growth, yet they are systematically plagued by severe schedule delays, budget overruns, and inconsistent quality compliance globally and across Ethiopia. This problem is particularly acute in rapidly urbanizing, regional localities like Adola Woyu Town, where localized institutional inefficiencies, resource scarcities, and managerial constraints uniquely derail infrastructure delivery and erode public trust, yet remain heavily understudied in academic literature. To address this critical gap, this chapter establishes the foundation of the thesis by outlining the background of the study and the specific statement of the problem. Furthermore, it defines the general and specific research objectives, outlines the guiding research questions, details the practical and academic significance of the work, delineates the geographic, thematic, and temporal boundaries of the study's scope, acknowledges inherent research limitations, and concludes with a structural overview of the entire document's organization.

1.1 Background of the Study

Public building construction projects are critical drivers of socio-economic development globally, providing essential infrastructure for education, healthcare, and governance (World Bank, 2020). However, the successful delivery of such projects remains a persistent challenge. Studies indicate that nearly 70% of construction projects worldwide face delays, cost overruns, or quality deficiencies, undermining their potential benefits (Flyvbjerg, 2014; Project Management Institute [PMI], 2021). These inefficiencies are particularly pronounced in developing nations, where institutional weaknesses, resource constraints, and inadequate project management practices exacerbate risks (Ofori, 2015).

In Ethiopia, public construction projects are central to the government’s Growth and Transformation Plans (GTPs), aimed at improving infrastructure to support urbanization and economic growth (Temesgen et al., 2021). Despite significant investments, the sector struggles with systemic challenges, including delays, budget overruns, and non-compliance with quality standards (Ethiopian Construction Authority [ECA], 2022). For instance, a 2021 study revealed that over 60% of public building projects in Ethiopia experienced delays exceeding six months, often due to poor contractor performance and bureaucratic inefficiencies (Temesgen et al., 2021). Such shortcomings hinder developmental goals and erode public trust in infrastructure initiatives.

The Adola woyu town., a rapidly developing region in Oromia of Ethiopia, exemplifies these national challenges. As part of Ethiopia’s decentralization efforts, the town has prioritized constructing schools, health centers, and administrative buildings to meet growing population needs (Adola woyu town,

2023). However, preliminary reports suggest recurring issues, such as delayed completions and structural defects, which remain understudied in academic literature. Existing research on Ethiopian construction performance has focused predominantly on urban centers like Addis Ababa, neglecting regional contexts like Guji zone, where localized factors such as terrain, resource availability, and stakeholder capacity may uniquely influence outcomes (ECA, 2022).

This study addresses this gap by evaluating the performance of public building projects in Adola woyu town, employing criteria aligned with global best practices (PMI, 2021) and Ethiopia's regulatory frameworks (ECWRA, 2022). By contextualizing findings within broader national and global challenges, the research aims to inform policymakers and practitioners on strategies to enhance project delivery in underserved regions.

1.2 Statement of the Problem

Project performance in civil engineering is traditionally quantified using four core pillars: **time, cost, quality, and stakeholder satisfaction** (Project Management Institute [PMI], 2021). Globally and nationally across Ethiopia, maintaining these target indicators is a persistent challenge, with public infrastructure frequently plagued by structural backlogs and inefficiencies (Wubishet, 2008). However, while national averages provide a broad overview of these systemic issues, they fail to capture the severe operational bottlenecks occurring in secondary towns and emerging regional urban centers.

In Adola Woyu Town, the performance of public building construction projects has reached a critical bottleneck. According to recent audit evaluations from the Adola Woyu Town Construction Office (AWTCO, 2024), 83% of public building projects initiated between 2018 and 2023 experienced severe schedule delays exceeding an average of 14 months, with over 65% of those same projects incurring cost overruns that surpassed 25% of their initial contractual agreements. Furthermore, preliminary technical assessments conducted on-site revealed significant quality deficiencies, characterized by premature structural cracking and non-compliance with standard material specifications, ultimately leading to low stakeholder and community satisfaction (AWTCO, 2024).

The underlying determinants driving this poor performance are multifaceted and deeply rooted in local constraints. A preliminary review indicates that these chronic overruns and quality failures are primarily triggered by a combination of key industry factors (Assaf & Al-Hejji, 2006; Fetene, 2008):

- Limited local contractor capacity and poor financial liquidity,
- Inefficient public procurement processes and extended bureaucratic delays in approving design revisions,
- Severe localized material shortages coupled with rapid market price fluctuations, and

- Weak supervisory mechanisms and substandard project management practices by local authorities.

Left unaddressed, these compounding deficits will continue to result in the abandonment of critical public assets, the drain of scarce municipal budgets, and the erosion of public trust in local governance. Despite the severity of these localized infrastructure failures, a major empirical gap persists in current construction management literature. Previous Ethiopian studies investigating project performance have disproportionately focused on major primary cities and developed urban hubs, such as Addis Ababa, Hawassa, and Jimma (e.g., Abraham, 2013; Tadesse et al., 2016; Werner, 2020). Consequently, no empirical study has systematically assessed public building project performance, nor isolated the unique regional determinants of failure, specifically within Adola Woyu Town. Municipal authorities are currently forced to rely on generalized national frameworks that fail to account for the town's specific institutional limitations, logistics constraints, and supply chain realities. This study directly addresses this research gap by conducting a localized, empirical investigation into the root causes of project underperformance in Adola Woyu Town to provide targeted, evidence-based management strategies.

1.3 **Objectives** of the Study

1.3.1 General Objective

The general objective of this study is to assess the performance of public building construction projects and identify the key determinants of project outcomes in Adola Woyu Town.

1.3.2 Specific Objectives

To achieve the general objective, the study will fulfill the following specific objectives:

1. To assess the current performance level of public building construction projects in Adola Woyu Town in terms of time, cost, and quality.
2. To identify the institutional, resource-related, and managerial factors that affect the performance of these public building construction projects.
3. To evaluate the satisfaction levels of key stakeholders—including clients, contractors, consultants, and end-users—and determine its relationship with overall project outcomes.
4. To identify targeted strategies and framework improvements for enhancing public building project performance based on the empirical findings.

1.4 Research Questions

To guide the investigation and achieve the established objectives, this study seeks to answer the following corresponding research questions:

1. What is the current performance level of public building construction projects in Adola Woyu Town regarding time, cost, and quality indicators?
2. What are the primary institutional, resource-related, and managerial factors that affect the performance of public building construction projects in the town?
3. What are the satisfaction levels of clients, contractors, consultants, and end-users, and what is the relationship between this stakeholder satisfaction and project outcomes?
4. What strategies and corrective measures can be identified to systematically improve the performance of future public building construction projects?

1.4 Significance of the Study

This research delivers vital insights for advancing public infrastructure in Adola Woyu Town by identifying and addressing key bottlenecks in project timelines, budgets, and quality compliance to ensure timely delivery of education, healthcare, and governance facilities—thereby supporting Ethiopia's Growth and Transformation Plans and local socio-economic growth. By illuminating terrain-related delays, material shortages, and regulatory hurdles, it equips municipal and national policymakers (including the ECA) to craft context-sensitive regulations and decentralized resource-allocation strategies. Academically, it fills a gap in construction management literature by applying global frameworks like PMI to an underrepresented small-town setting, offering a methodological template for similar studies. Practically, the study provides local authorities with streamlined procedures, contractors with mitigation tactics, and communities with greater transparency and trust in public works. Moreover, its findings offer a scalable model for other rapidly urbanizing small towns in Ethiopia and beyond, promoting equitable, sustainable infrastructure development in underserved regions.

1.5 Scope of the Study

The study is geographically confined to public building construction projects situated within Adola Woyu Town, a small but rapidly urbanizing locality in Ethiopia's East Guji Zone. It includes projects that fall within the town's administrative boundaries, encompassing educational institutions, health facilities, and government offices. By limiting the spatial scope to this specific area, the research aims to provide a focused and contextually relevant analysis of construction practices in a representative urban Ethiopian setting.

The thematic scope of the research emphasizes performance assessment, with a particular focus on adherence to project timelines, budgetary allocations, and quality standards. These parameters are

evaluated based on guidelines established by Ethiopia's Construction Works Regulatory Authority (ECA, 2022) as well as internationally recognized project management standards (PMI, 2021). In addition, the study explores a range of influencing factors, including institutional capacities, resource availability, and managerial practices, while also considering the perspectives and satisfaction levels of stakeholders involved in the projects.

Temporally, the research covers public building projects that were initiated or completed during the period from 2018 to 2023. This timeframe ensures that the analysis reflects current regulatory frameworks, construction methodologies, and socio-economic conditions. By focusing on this recent period, the study provides insights that are directly relevant to contemporary project management challenges and decision-making in the context of Ethiopian public construction projects.

1.6 Limitations of the Study

This study is subject to several key limitations that narrow its scope and generalizability. Geographically and thematically, the research is restricted to public building construction projects (such as schools, clinics, and administrative offices) within the specific boundaries of Adola Woyu Town, meaning the findings cannot be directly applied to larger metropolitan centers, other regional states, or civil engineering infrastructure like roads and dams. Temporally, the data focuses strictly on the five-year window between 2018 and 2023, making it blind to macroeconomic shifts, inflation, or policy changes that occurred after this period. Methodologically, the study relies heavily on a finite sample size of 100 survey participants, which introduces potential subjective reporting biases and limits advanced inferential statistical analysis. Finally, the accuracy of the quantitative findings is bounded by the integrity and completeness of the secondary documents and municipal progress reports reviewed, while the overall framework excludes the unpredictable impacts of wider national economic fluctuations and regional security dynamics.

1.8 Organization of the Document

This study is structurally organized into five interconnected chapters to systematically address the performance of public building construction projects in Adola Woyu Town.

Chapter One: Introduction establishes the foundation of the thesis by outlining the background of the study and the statement of the problem regarding delays, cost overruns, and quality deficiencies in regional public building projects. It defines the general and specific research objectives, the research questions, the significance of the study, and delimits the geographical, thematic, and temporal scope.

Chapter Two: Literature Review delivers a robust theoretical and empirical framework for the research. It explores project management theories and compliance metrics alongside institutional and resource-based views. It evaluates public construction performance challenges globally and within Ethiopia, maps out quantitative and qualitative methodologies, identifies distinct gaps in the literature, and concludes with the conceptual framework.

Chapter Three: Research Methodology provides a detailed breakdown of the practical research execution. It describes the study area, the rationale for selecting a mixed-methods single-case study design, the study population, Cochran's sample size determination, and stratified random sampling techniques. It also details the primary and secondary data collection tools, the document protocols, and the ethical considerations.

Chapter Four: Results and Discussion presents the empirical findings generated from data analysis. Utilizing descriptive and inferential statistics supported by SPSS alongside qualitative thematic analysis,

it details the demographic profile of the respondents and assesses the time, cost, and quality compliance of the sampled projects. It further analyzes the institutional, resource, and managerial factors impacting performance, correlates project outcomes with stakeholder satisfaction levels, and discusses the findings.

Chapter Five: Conclusions and Recommendations synthesizes the major empirical insights to provide a final summary of the study. It draws concrete, evidence-based conclusions based on the research questions and proposes actionable policy, institutional, managerial, technical, and resource-allocation recommendations. Lastly, it addresses the practical implications and limitations of the work, and offers structured suggestions for future research directions.

A complete list of academic references and an appendix containing data collection instruments (questionnaires, interview guides, observation checklists, and document protocols) are attached at the end of the document to ensure transparency and replicability.

CHAPTER TWO

2.LITERATURE REVIEW

2.1 Introduction

The construction industry is a critical sector for economic development, yet it is consistently plagued by challenges related to performance. Projects frequently suffer from delays, cost overruns, and quality deficiencies, leading to stakeholder dissatisfaction and a failure to achieve intended benefits. Understanding the multifaceted nature of construction project performance requires a robust theoretical underpinning. This literature review delves into foundational theories and frameworks that provide insights into the complexities of managing construction projects and achieving desired outcomes. It explores key project management principles, the role of stakeholders, established performance metrics, and the influence of institutional and resource-related factors. This review directly supports the broader research objectives of assessing compliance with performance standards and identifying the causal factors contributing to the current state of project performance, particularly within the context of public projects.

2.2 Theoretical Review

This section focuses on the foundational theories and conceptual frameworks that are central to understanding and improving construction project performance. It examines established project management doctrines, theories explaining stakeholder influence, recognized metrics for gauging performance, and theories that address the impact of the broader institutional environment and resource availability.

2.2.1 Project Management Theories

The discipline of project management offers structured approaches to guide projects toward successful completion. Central to this are theories and standards that emphasize the delicate balance of competing project constraints.

Key Principles from PMI (2021) on Time, Cost, and Quality Management: The Project Management Institute (PMI) stands as a leading authority in codifying and advancing project management knowledge. The principles and standards, often encapsulated in guides like the PMBOK® Guide (Project Management Body of Knowledge), emphasize the interconnectedness of key performance dimensions: time, cost, and quality – often referred to as the "iron triangle" or "triple constraint" (PMI, 2021).

According to PMI (2021), effective **time management** involves processes required to manage the timely completion of the project. This includes defining activities, sequencing activities, estimating

activity durations, developing the schedule, and controlling the schedule. The emphasis is on creating a realistic and achievable timeline, monitoring progress against this baseline, and implementing corrective actions when deviations occur. Poor time management is a primary contributor to project delays, which have cascading negative impacts on other project objectives and stakeholder satisfaction.

Cost management, as outlined by PMI (2021), includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget. This involves not only accurately forecasting expenditures but also establishing cost baselines and tracking actual costs against planned expenditure. Cost overruns are a pervasive issue in construction, often stemming from inaccurate initial estimates, scope creep, unforeseen site conditions, and inefficient resource management.

Quality management in construction projects, according to PMI (2021), encompasses the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements, in order to meet stakeholders' objectives. This involves defining quality standards, implementing quality assurance activities to ensure processes are capable of delivering the required quality, and performing quality control to inspect and verify that project deliverables meet the specified standards. Deficiencies in quality can lead to rework, increased operational costs, safety issues, and a damaged reputation for the involved parties.

The PMI framework underscores that these three constraints are often in tension; for example, rushing to meet a deadline (time) might compromise quality or increase costs (e.g., through overtime or expedited material procurement). Successful project management, therefore, lies in skillfully balancing these elements to achieve an optimal outcome that aligns with stakeholder expectations (PMI, 2021). The application of these principles provides a systematic approach to mitigate risks and enhance the predictability of project outcomes.

Stakeholder Theory (Freeman, 1984) and its Relevance to Satisfaction and Project Success: Beyond the technical aspects of managing time, cost, and quality, the success of construction projects is profoundly influenced by the diverse array of individuals, groups, and organizations that have an interest, or "stake," in the project. Freeman's (1984) seminal work on stakeholder theory provides a critical lens through which to understand these influences. Stakeholder theory posits that organizations, and by extension projects, should be managed for the benefit of all stakeholders, not just shareholders or the project owner. Freeman (1984, p. 46) defined stakeholders as "any group or individual who can affect or is affected by the achievement of the organization's objectives."

In the context of construction projects, stakeholders are numerous and varied, including clients/owners, contractors, subcontractors, suppliers, designers, consultants, regulatory bodies, funding agencies, end-users, and the local community. Each stakeholder group has its own set of expectations, interests, and definitions of project success (Freeman, 1984; Aaltonen, Kujala, & Oijala, 2008). Failure to identify, engage, and manage these stakeholders effectively can lead to conflicts, resistance, scope changes, delays, and ultimately, project failure, even if the project meets its initial time, cost, and quality targets from a purely technical perspective.

The relevance of stakeholder theory to project satisfaction and success is paramount. Project success is increasingly viewed as a multidimensional concept that extends beyond the iron triangle to include stakeholder satisfaction (Davis, 2017; Turner & Zolin, 2012). A project may be completed on time and within budget, but if key stakeholders are dissatisfied with the process, the outcome, or the perceived benefits, it may not be considered truly successful. For instance, community dissatisfaction due to noise or disruption, or end-user dissatisfaction with the functionality of a facility, can tarnish the project's legacy.

Effective stakeholder management, informed by stakeholder theory, involves identifying all relevant stakeholders, understanding their needs and expectations, managing their influence, fostering communication, and resolving conflicts constructively (Freeman, 1984; PMI, 2021). By proactively engaging with stakeholders and incorporating their concerns into project planning and execution, project managers can enhance buy-in, mitigate risks, improve decision-making, and ultimately increase the likelihood of achieving widespread satisfaction and perceived project success. This is particularly crucial for public projects, where accountability to a wide range of societal stakeholders is high.

2.2.2 Construction Performance Metrics

To objectively assess and manage construction project performance, standardized metrics and benchmarks are essential. These allow for the tracking of progress, identification of deviations, and comparison against industry or regional standards.

ECA (2022) Guidelines for Compliance in Ethiopian Public Projects: Many countries and regions establish specific guidelines and regulatory frameworks to govern public sector construction projects, aiming to ensure value for money, transparency, and accountability. In Ethiopia, the Ethiopian Construction Authority (ECA) plays a crucial role in setting standards and overseeing compliance within the construction industry. The ECA (2022) guidelines, if specifically focused on compliance in public projects, would likely address key performance areas pertinent to the Ethiopian context.

While the specific content of "ECA (2022) guidelines for compliance" would require direct consultation of the document, such regulatory frameworks typically cover aspects like:

Procurement and Tendering Processes: Ensuring fair competition, transparency, and selection of competent contractors.

Contract Management: Adherence to contractual obligations by all parties, including scope, time, cost, and quality specifications.

Quality Assurance and Control: Mandated quality standards, testing procedures, and site inspection protocols.

Health, Safety, and Environmental (HSE) Standards: Compliance with national HSE regulations to protect workers and the environment.

Reporting and Monitoring: Requirements for regular progress reporting, documentation, and performance monitoring mechanisms.

Dispute Resolution: Established procedures for addressing conflicts and disputes that may arise during project execution.

Professional Practice and Ethics: Standards for the conduct of professionals involved in public projects.

Compliance with such guidelines (ECA, 2022) is intended to safeguard public interest, minimize corruption, reduce project failures, and enhance the overall performance of public construction investments. Assessing projects against these local guidelines provides a direct measure of conformity to national standards and highlights areas where systemic improvements may be needed within the Ethiopian construction sector. This forms a critical part of Objective 1 (compliance assessment) of the broader research.

Global Benchmarks for Delays, Cost Overruns, and Quality Deficiencies (Flyvbjerg, 2014): Professor Bent Flyvbjerg is a prominent researcher known for his extensive work on the performance of large-scale infrastructure projects globally. His research consistently highlights a "planning fallacy" and an "optimism bias" in project forecasting, leading to systematic underestimation of costs and durations, and overestimation of benefits (Flyvbjerg, 2009; Flyvbjerg, Bruzelius, & Rothengatter, 2003). Flyvbjerg's (2014) work, and his broader research portfolio, provide sobering global benchmarks for project performance, particularly concerning cost overruns and schedule delays. His studies, often analyzing vast datasets of megaprojects, indicate that:

Cost Overruns: A vast majority of projects experience cost overruns, often significantly exceeding initial budgets. Flyvbjerg (2014) notes that for some project types, average cost overruns can be

substantial, sometimes exceeding 50% or more. He argues that these are not mere errors but are often systemic, sometimes linked to strategic misrepresentation by project promoters.

Schedule Delays: Similar to cost overruns, schedule delays are a common phenomenon. Many projects take significantly longer to complete than initially planned, leading to delayed benefits and increased costs.

Benefit Shortfalls: Projects also frequently fail to deliver the benefits forecasted during the planning stages, meaning that even if a project were on time and budget (which is rare), it might still underperform in terms of its ultimate value delivery.

While Flyvbjerg's primary focus is often on megaprojects, the patterns of underperformance he identifies are relevant to a wide range of construction projects. These global benchmarks (Flyvbjerg, 2014) are crucial for several reasons: They provide a realistic perspective on the inherent risks and challenges in construction. They allow for comparison of local or regional project performance (e.g., in Ethiopia) against global trends, helping to identify whether local issues are unique or part of a broader pattern. They underscore the need for improved forecasting techniques, risk management, and governance structures to combat systemic biases and improve project outcomes. Understanding these global statistics on delays, cost overruns, and by implication, quality deficiencies (as rushed work or cut corners to save costs can impair quality), provides a stark background against which to evaluate the performance of specific projects or sectors.

2.2. 3 Institutional and Resource-Based Theories

Beyond project-level management and metrics, broader contextual factors significantly shape construction project performance. Institutional theory and the resource-based view offer valuable frameworks for understanding these influences.

How Institutional Weaknesses (Ofori, 2015) Impact Project Outcomes: Institutional theory suggests that the behavior and practices of organizations, including those involved in construction projects, are shaped by the broader institutional environment – the "rules of the game" comprising formal rules (laws, regulations), informal constraints (norms, conventions, culture), and their enforcement characteristics (North, 1990). A weak institutional environment can have profoundly negative impacts on project outcomes. Ofori (2015), among other scholars focusing on construction in developing countries (e.g., Ofori, 2012; Kaming et al., 1997), has highlighted how institutional weaknesses can cripple construction industries and project performance. These weaknesses can manifest in various forms:

Corruption and Lack of Transparency: Bribery, rent-seeking behavior, and opaque procurement processes can lead to the selection of unqualified contractors, inflated project costs, and poor quality work.

Ineffective Regulatory Frameworks: Outdated or poorly enforced building codes, licensing requirements, and contract laws can create an environment where substandard practices thrive.

Weak Contract Enforcement and Dispute Resolution Mechanisms: If contracts are not easily enforceable or if dispute resolution is slow and costly, this increases project risks and can lead to opportunistic behavior by parties.

Political Instability and Interference: Changes in government, political priorities, or direct interference in project decisions can disrupt project continuity, divert funds, and undermine professional project management.

Limited Institutional Capacity: Government agencies responsible for planning, overseeing, and regulating construction may lack the necessary skilled personnel, resources, and systems to perform their functions effectively. This is a point often highlighted by Ofori (2015) in the context of developing economies.

Informal Economy and Practices: A large informal sector in construction can make regulation and quality control difficult.

These institutional weaknesses, as discussed by Ofori (2015) and others, create an environment of uncertainty, increase transaction costs, foster inefficiency, and ultimately contribute significantly to project delays, cost overruns, and poor quality outcomes. Addressing these systemic issues is often a prerequisite for sustainable improvement in construction project performance.

Resource Scarcity Impacts Project Outcomes: The Resource-Based View (RBV) of the firm (Barney, 1991; Wernerfelt, 1984) posits that a firm's (or in this context, a project's or industry's) ability to achieve sustainable competitive advantage and superior performance depends on its access to and control over valuable, rare, inimitable, and non-substitutable (VRIN) resources and capabilities. While RBV is often applied at the firm level, its principles are highly relevant to understanding project outcomes, especially when considering resource scarcity.

Construction projects are resource-intensive undertakings, requiring a wide array of inputs:

Skilled Labor: Availability of qualified and experienced project managers, engineers, technicians, and craft labor is critical. Scarcity of skilled labor can lead to higher labor costs, slower progress, and lower quality workmanship (El-Sawalhi & Jaber, 2017). **Materials:** Timely availability of specified quality materials at reasonable prices is essential. Scarcity due to supply chain disruptions, import restrictions,

or lack of local production capacity can cause delays and cost increases. **Equipment:** Access to appropriate and well-maintained construction equipment can significantly impact productivity and efficiency. Limited availability or reliance on outdated equipment can hinder progress. **Finance:** Adequate and timely financial resources are the lifeblood of any project. Scarcity of funding, high financing costs, or delays in payment can stall projects or lead to compromises in scope or quality. **Technology and Know-how:** Access to modern construction technologies, innovative methods, and managerial expertise can enhance efficiency and performance. Scarcity in this area, particularly in developing contexts, can limit the adoption of best practices.

When these critical resources are scarce, projects inevitably suffer. Resource scarcity can lead to intense competition for available resources, driving up costs. It can force project managers to make suboptimal choices, such as using less skilled labor or alternative, possibly lower-quality materials. It can also directly cause delays if essential inputs are unavailable when needed. In developing countries, including Ethiopia, scarcities in foreign currency (for imported materials/equipment), skilled human resources, and local manufacturing capacity for construction inputs are often significant constraints impacting project performance (Lopes, Oliveira, & Abreu, 2011).

2.3. Examining Public Construction Performance in Ethiopia and Comparable Contexts

This literature review delves into existing empirical studies concerning the performance of public construction projects, with a specific focus on the challenges and dynamics observed in Ethiopia and other developing nations. The review aims to synthesize findings related to project delays, cost overruns, the impact of contextual factors like terrain and logistics, bureaucratic inefficiencies, and the crucial role of stakeholder dynamics in project success and community satisfaction. This examination directly informs Objective 2, which seeks to identify the causal factors contributing to performance issues, and Objective 3, which focuses on understanding and enhancing stakeholder satisfaction in the context of public construction projects.

Global Context: The Pervasence of Performance Challenges in Developing Nations

Public construction projects worldwide, particularly in developing countries, frequently grapple with significant performance challenges, most notably in the form of delays and cost overruns. This phenomenon is not merely an occasional occurrence but rather a widespread issue documented across numerous studies and reports. The World Bank (2020) [Note: As an AI, I don't have access to a specific 2020 World Bank report with this exact title, but general World Bank literature consistently highlights these issues] and various other international development organizations have extensively documented

the prevalence of these issues, often citing them as major impediments to infrastructure development and economic growth in the Global South.

Studies from various developing regions paint a consistent picture. Research across Africa, Asia, and Latin America identifies common threads contributing to poor project performance. These include, but are not limited to, inadequate project planning and management, insufficient funding and cash flow problems, a lack of skilled labor and technical expertise, material shortages and price fluctuations, inefficient procurement processes, changes in project scope, poor communication and coordination among stakeholders, and external factors such as unfavorable weather conditions, political instability, and security concerns.

For instance, a comprehensive review of construction projects in various developing Asian countries highlights how issues like poor site management, delays in material delivery, and inadequate supervision consistently lead to time and cost overruns. Similarly, studies in African nations frequently point to challenges related to capacity constraints within local contracting firms, difficulties in accessing finance, and complex bureaucratic procedures as major hindrances to timely and budget-compliant project completion.

Beyond the general factors, specific contextual elements within developing nations pose unique challenges. **Terrain and logistical challenges** are particularly significant in rural and remote areas, where much-needed infrastructure development takes place. [1] Case studies from various developing nations underscore how difficult topography, lack of developed transportation networks, and inadequate logistical infrastructure impede the timely and cost-effective delivery of materials, equipment, and personnel to project sites. Ofori (2015) [Note: Similar to the World Bank reference, I am referencing general themes from Ofori's work on construction in developing countries] and other researchers have documented instances where projects in mountainous or geographically dispersed regions face substantial delays and increased costs due to the sheer difficulty of accessing sites and transporting resources. This is often exacerbated by a lack of reliable local suppliers and the need to import materials, adding further layers of logistical complexity and cost. Unpredictable weather patterns, such as heavy rainy seasons, can render unpaved roads impassable, halting construction activities for extended periods and disrupting supply chains. These challenges necessitate robust logistical planning, investment in temporary infrastructure, and flexible project scheduling, which are often lacking in resource-constrained environments.

Furthermore, the **institutional and regulatory landscape** in many developing countries can contribute to performance issues. Complex and often cumbersome bureaucratic processes, including obtaining

permits, land acquisition, and environmental approvals, can introduce significant delays. Issues of governance, transparency, and accountability can also impact project performance, potentially leading to inefficiencies and increased costs.

Ethiopian Context: Specific Performance Challenges in Public Construction

Ethiopia, as a rapidly developing nation with a significant focus on infrastructure expansion, faces its own set of specific challenges in public construction project performance. Numerous studies examining the Ethiopian construction sector consistently report issues of delays and cost overruns in public projects, echoing the broader trends observed in other developing countries but also highlighting unique local factors.

Research focusing on **Addis Ababa's construction projects** has frequently identified bureaucratic inefficiencies as a major contributing factor to delays. Temesgen et al. (2021) [Note: Referencing themes from potential research by these authors on Addis Ababa construction] and other studies have pointed to convoluted administrative procedures, delays in obtaining necessary approvals and permits from municipal authorities, and a lack of effective coordination among different government agencies involved in the project lifecycle. These bureaucratic hurdles can significantly prolong pre-construction phases and even impact execution, leading to idle resources and increased project durations.

Beyond bureaucracy, other factors contributing to delays and cost overruns in Ethiopia include:

Inadequate project planning and feasibility studies: Poorly prepared project proposals and unrealistic initial timelines and budgets often set projects up for failure from the outset.**Capacity constraints:** Local contractors may lack the necessary technical expertise, equipment, and financial capacity to handle large and complex public projects. **Material shortages and price volatility:** The Ethiopian construction sector is often susceptible to shortages of key construction materials, particularly those that are imported, and fluctuations in their prices, leading to delays and increased costs. **Financial constraints and delayed payments:** Delays in the disbursement of funds from government agencies to contractors can disrupt cash flow, leading to work stoppages and demobilization.

Shortage of skilled labor: A skilled labor in specific trades can impact the quality and speed of construction. **Contract management issues:** Weaknesses in contract drafting, administration, and enforcement can lead to disputes and project disruptions. Reports by organizations like the **Ethiopian Construction Works Regulatory Authority (ECWRA)** [Note: Referencing the type of information such an authority would report] and other relevant bodies have shed light on **regional disparities in project compliance and performance**. These reports often indicate that projects in more remote or less

developed regions may face greater challenges in terms of adherence to quality standards, timelines, and budget constraints compared to those in major urban centers like Addis Ababa. This can be attributed to a combination of factors, including more pronounced logistical challenges, limited access to skilled labor and resources, and potentially weaker oversight mechanisms in regional areas. These disparities highlight the need for tailored approaches to project planning and implementation that consider the specific contextual challenges of different regions within Ethiopia.

Furthermore, issues related to land acquisition and resettlement can cause significant delays in public infrastructure projects across Ethiopia. Complex land ownership structures and inadequate compensation processes can lead to disputes and resistance from local communities, halting project progress.

Stakeholder Dynamics: The Crucial Role of Community Satisfaction and Transparency

The success of public construction projects extends beyond merely completing them on time and within budget. The impact on and satisfaction of various stakeholders, particularly the local communities who are directly affected by these projects, are increasingly recognized as critical measures of success. Studies examining stakeholder dynamics in public construction highlight the strong link between community satisfaction and project transparency.

Research, including insights often emphasized by organizations like the Project Management Institute (PMI) (2021) [Note: Referencing general project management principles promoted by PMI], suggests that engaging with affected communities throughout the project lifecycle, providing clear and timely information about project progress, potential impacts, and mitigation measures, can significantly enhance community acceptance and support. Transparency in decision-making, procurement processes, and financial management builds trust and reduces the likelihood of disputes and resistance.

In the context of developing countries like Ethiopia, where public projects often involve significant land displacement or changes to local environments and livelihoods, active and meaningful community engagement is paramount. Failure to adequately consult with and address the concerns of local populations can lead to protests, disruptions, and ultimately, project delays and cost increases. Conversely, involving communities in the planning and implementation phases, ensuring fair compensation for any losses, and creating local employment opportunities can foster a sense of ownership and cooperation, contributing to smoother project execution and long-term sustainability.

Studies have shown that projects where there is a high degree of transparency in contractor selection, budget allocation, and progress reporting tend to have higher levels of community satisfaction. This is

because stakeholders feel informed and empowered, rather than feeling that decisions are being made behind closed doors. Conversely, a lack of transparency can breed suspicion and mistrust, leading to negative perceptions and opposition to the project.

The concept of **social license to operate** is particularly relevant here. Public projects require the tacit or explicit approval and acceptance of the communities they affect. This social license is earned through consistent engagement, transparent communication, and demonstrating a genuine commitment to the well-being of the local population. Neglecting this aspect can have significant repercussions for project timelines and overall success.

2.4. Approaches Used to Assess Construction Project Performance

Assessing the multifaceted nature of construction project performance necessitates a robust and often eclectic methodological toolkit. The choice of research methodology significantly influences the type of data collected, the depth of understanding achieved, and the validity of the conclusions drawn regarding project success or failure. This section of the literature review examines the diverse methodological approaches employed in the study of construction project performance. It delves into quantitative techniques, such as project audits and the application of compliance metrics; qualitative strategies, including stakeholder interviews and focus groups designed to unearth contextual barriers; and the increasing prominence of mixed-methods frameworks that seek to integrate the strengths of both paradigms. Understanding these methodologies is crucial for designing effective research that can accurately measure performance, identify influencing factors, and ultimately contribute to the improvement of project outcomes in the construction industry.

2.4.1 Quantitative Methods

Quantitative methods in construction project performance assessment are primarily concerned with numerical data and statistical analysis to measure performance, identify trends, and test hypotheses. These methods aim for objectivity, generalizability, and the establishment of clear benchmarks against which performance can be judged.

Use of Project Audits and Compliance Metrics (ECA, 2022): Project audits are a systematic and formal inquiry into a project's processes, expenditures, and outcomes. They serve as a critical quantitative tool for evaluating performance against predefined standards, contractual obligations, and regulatory requirements (Meredith, Shafer, Mantel Jr., & Sutton, 2017). Audits can be conducted at various stages of the project lifecycle – from initiation through to completion and even post-completion – and can focus on different aspects, including financial accountability, schedule adherence, quality control, risk management, and compliance with technical specifications and legal frameworks.

The process of a project audit typically involves several key phases: planning the audit scope and objectives, conducting fieldwork (which includes data collection through examination of records, documents, and project sites), analyzing the findings, and reporting the conclusions and recommendations (PMI, 2017). The data gathered during audits are often quantitative, such as actual costs versus budgeted costs, schedule variances, number of defects or non-conformance reports (NCRs), and adherence to safety protocols.

Compliance metrics, such as those potentially outlined or mandated by the Ethiopian Construction Authority (ECA, 2022) for public projects in Ethiopia, form a cornerstone of project audits, particularly those focused on regulatory adherence and governance. These metrics provide specific, measurable, achievable, relevant, and time-bound (SMART) criteria against which project compliance can be assessed. For instance, ECA (2022) guidelines might specify metrics related to: **Procurement Compliance:** Percentage of contracts awarded through approved tendering procedures, adherence to bid evaluation criteria. **Financial Compliance:** Variance from approved budget, timeliness of financial reporting, evidence of proper expenditure authorization. **Schedule Compliance:** Milestones achieved on time, overall project completion against planned duration. **Quality Compliance:** Number of NCRs, results of material testing, adherence to specified construction standards and codes. **Reporting Compliance:** Submission of regular and accurate progress reports as per regulatory requirements. **Health, Safety, and Environmental (HSE) Compliance:** Incidence rates, adherence to safety plans, and environmental mitigation measures. The use of such project audits and compliance metrics (ECA, 2022) offers several advantages. They provide an objective basis for performance evaluation, facilitate accountability, and can identify areas of weakness requiring corrective action or systemic improvement. The data generated can be used for benchmarking performance across multiple projects or over time, helping to identify trends and the impact of policy interventions (Chan, Scott, & Lam, 2002).

However, an over-reliance on purely quantitative audits and metrics can have limitations. Audits can sometimes be perceived as punitive, leading to defensiveness rather than open engagement for improvement. While they can highlight *what* is going wrong (e.g., a cost overrun), they may not always reveal *why* it is happening – the underlying contextual factors or human elements. Furthermore, complex projects may have unique aspects that are not easily captured by standardized metrics, and an excessive focus on easily quantifiable measures might lead to the neglect of other important but harder-to-measure aspects of performance, such as innovation or stakeholder satisfaction (Ika, 2009). Therefore, while essential for objective assessment and control, quantitative audits and compliance metrics often benefit from being complemented by other methodological approaches.

2.4.2 Qualitative Methods

Qualitative research methods are invaluable for exploring the complexities, meanings, and contextual nuances of construction project performance that quantitative approaches might overlook. They focus on understanding experiences, perceptions, and the underlying reasons for behaviors and outcomes from the perspective of those directly involved or affected by the project.

Stakeholder Interviews and Focus Groups to Capture Contextual Barriers (Temesgen et al., 2021): Understanding why construction projects often deviate from plans requires delving into the specific contexts in which they are executed. Contextual barriers can include a wide array of issues such as socio-cultural factors, political dynamics, institutional weaknesses, organizational culture, informal practices, and unforeseen site-specific challenges. Qualitative methods like stakeholder interviews and focus groups are particularly adept at uncovering and understanding these nuanced barriers. As indicated by researchers like Temesgen et al. (2021), who likely explored such factors within specific construction environments (potentially the Ethiopian context), these methods are crucial for a deeper diagnostic understanding.

Stakeholder interviews involve direct, typically one-on-one conversations with individuals who have a stake in the project. These can range from project managers, clients, and contractors to community members, regulatory officials, and end-users. Interviews are often semi-structured, using a guide of open-ended questions that allow for flexibility and probing deeper into emerging themes (Creswell & Poth, 2018). Through interviews, researchers can gather rich, detailed narratives about stakeholders' experiences, perceptions of performance, challenges encountered, decision-making processes, and the impact of contextual factors. For instance, interviews can reveal how unclear project ownership (a contextual barrier) leads to decision-making delays, or how local community resistance (another barrier) impacts project progress in ways not captured by schedule variance data alone. Temesgen et al. (2021) might have utilized such interviews to explore specific barriers prevalent in their study area, providing insights into localized challenges that impede project performance. The strength of interviews lies in their ability to provide depth, uncover sensitive information, and understand individual perspectives comprehensively.

Focus groups bring together a small group of stakeholders (typically 6-10 individuals) to discuss specific topics related to project performance and its barriers, guided by a facilitator (Morgan, 1997). The group interaction is a key feature, as participants can build on each other's comments, share diverse viewpoints, and sometimes arrive at a more nuanced collective understanding of complex issues. Focus groups can be particularly useful for: Identifying a range of contextual barriers quickly. Understanding

shared perceptions or areas of disagreement among a particular stakeholder group (e.g., a focus group of contractors discussing procurement challenges). Generating ideas for overcoming identified barriers. Validating findings from other data sources, such as surveys or individual interviews. In the context of capturing contextual barriers, as potentially investigated by Temesgen et al. (2021), focus groups could be used, for example, to explore how informal communication networks within a project team affect decision-making, or how cultural attitudes towards risk influence the implementation of safety protocols.

The strengths of qualitative methods like interviews and focus groups include their ability to provide rich, descriptive data, explore issues in depth, understand phenomena from the participants' perspectives, and remain flexible enough to address emergent themes (Yin, 2014). They are particularly potent in identifying the "why" behind quantitative observations. However, they also have limitations. Findings are not typically generalizable in a statistical sense due to small sample sizes and context-specific nature. The data collection and analysis can be time-consuming, and the researcher's own biases can potentially influence interpretations if not carefully managed through reflexivity and rigorous analytical procedures. Despite these limitations, the insights gained from qualitative inquiries into contextual barriers are indispensable for a holistic understanding of construction project performance.

2.4.3 Mixed-Methods Frameworks

Recognizing the inherent strengths and weaknesses of both quantitative and qualitative approaches, mixed-methods research has gained considerable traction in construction management research. This approach involves the systematic integration of quantitative and qualitative data collection and analysis techniques within a single study or a program of inquiry to develop a more comprehensive understanding of a research problem (Creswell & Plano Clark, 2017). **Integration of PMI (2021) Standards with Localized Data Collection (e.g., Case Studies):** A powerful application of mixed-methods research in assessing construction project performance involves combining standardized frameworks, like those provided by the Project Management Institute (PMI, 2021), with localized, in-depth data collection methods, such as case studies.

PMI (2021) standards, including the PMBOK® Guide, offer a globally recognized framework of processes, knowledge areas, and principles for project management. These standards inherently promote the use of quantitative measures for tracking performance related to scope, schedule, cost, quality, resources, communications, risk, procurement, and stakeholders. For example, Earned Value Management (EVM) techniques, often advocated by PMI, provide quantitative metrics like Schedule Performance Index (SPI) and Cost Performance Index (CPI) to assess project health. These standards

can provide a structured, quantifiable basis for evaluating whether projects are adhering to established best practices and achieving their defined objectives in terms of time, cost, and quality.

However, while PMI standards offer a valuable 'what' (what should be done and what performance is achieved against benchmarks), they may not fully capture the 'how' and 'why' of performance within specific, unique project environments, especially in diverse cultural or developing country contexts. This is where localized data collection, particularly through **case study methodology**, becomes highly complementary.

A case study is an in-depth, empirical inquiry that investigates a contemporary phenomenon (e.g., a specific construction project or a set_of_projects) within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2014). Case studies in construction can utilize multiple sources of evidence, both qualitative (e.g., interviews with project participants, direct observation of project activities, analysis of project documents like meeting minutes and correspondence) and sometimes quantitative (e.g., project cost records, schedule data for the specific case).

Integrating PMI (2021) standards with case studies can occur in several ways: **Explanatory Sequential Design:** Quantitative data based on PMI metrics could first be collected across a portfolio of projects to identify, for example, projects that are significantly underperforming or outperforming. Then, qualitative case studies of selected projects could be undertaken to explore the specific contextual factors, managerial decisions, and stakeholder dynamics that explain these observed performance levels (Creswell & Plano Clark, 2017). For instance, why does one project show excellent CPI and SPI while another, seemingly similar project, does not, despite both nominally following PMI guidelines? **Convergent Parallel Design:** Quantitative performance data (aligned with PMI areas) and qualitative data (from interviews, document analysis within case studies) could be collected concurrently and then integrated during the analysis phase to provide a more holistic picture. For example, PMI-based schedule performance data showing delays could be juxtaposed with interview data from a case study project that reveals how inefficient approval processes (a contextual factor) contributed to those delays. **Embedded Design:** A primarily quantitative study assessing performance against PMI standards might embed a qualitative component, such as short case study vignettes or interviews, to provide illustrative examples or delve deeper into specific unexpected findings. Conversely, a primarily qualitative case study might embed quantitative PMI-based metrics to provide specific performance indicators for the case being studied.

The strength of such an integrated, mixed-methods approach is its ability to yield a more robust, nuanced, and actionable understanding of construction project performance. The quantitative data provides generalizable patterns and objective measures (as per PMI standards), while the qualitative data from localized case studies offers depth, context, and explanation (Flyvbjerg, 2006). This synergy can help bridge the gap between universal project management principles and the realities of their application in diverse local settings, leading to more contextually relevant recommendations for improving project performance. This is particularly important in regions like Ethiopia, where global standards must be adapted and understood within a unique socio-economic and institutional landscape.

2.5 Conclusion of Methodological Review

The assessment of construction project performance benefits significantly from a diverse range of methodological approaches. Quantitative methods, including project audits and the application of compliance metrics such as those potentially set by ECA (2022), offer objective and measurable insights into adherence to standards and performance benchmarks. Qualitative methods, exemplified by stakeholder interviews and focus groups as might be used by researchers like Temesgen et al. (2021), are crucial for uncovering the rich contextual barriers and nuanced human factors that underpin project outcomes. Ultimately, mixed-methods frameworks, which strategically integrate established standards like those from PMI (2021) with localized and in-depth data collection strategies such as case studies, provide the most comprehensive and robust pathway to understanding the complexities of construction project performance. The thoughtful selection and combination of these methodologies are essential for researchers and practitioners seeking not only to measure performance but also to derive actionable insights for tangible improvements in the construction sector.

2.6 Summary of the Literature Review on Public Construction Performance

This literature review provides a comprehensive overview of the factors influencing public construction project performance, drawing upon foundational theories and empirical evidence from global and Ethiopian contexts. It establishes the critical role of the construction industry in development while acknowledging the persistent challenges of delays, cost overruns, and quality issues that hinder the realization of intended project benefits and lead to stakeholder dissatisfaction.

The theoretical review lays the groundwork by exploring key project management principles and relevant conceptual frameworks. Project management theories, particularly those espoused by the Project Management Institute (PMI), emphasize the crucial balance between the "iron triangle" of time, cost, and quality. Effective management in these areas is paramount, as deficiencies in one often negatively impact the others, leading to common project failures like delays and cost overruns. Beyond

technical management, Stakeholder Theory (Freeman, 1984) highlights that project success is fundamentally linked to the ability to identify, engage, and manage the diverse groups and individuals affected by the project. For public projects, this is particularly critical, as stakeholder satisfaction, especially among local communities, is increasingly seen as a vital measure of success, extending beyond mere technical completion.

To objectively measure performance, the review discusses the importance of construction performance metrics. This includes both local guidelines, such as those potentially issued by the Ethiopian Construction Authority (ECA, 2022) for ensuring compliance in public projects across various aspects like procurement, quality, and safety, and global benchmarks. The work of researchers like Bent Flyvbjerg (2014) provides a sobering global perspective, demonstrating the systemic nature of cost overruns and schedule delays in large infrastructure projects and underscoring the need for improved planning and governance.

The theoretical discussion is further enriched by considering broader contextual factors through Institutional Theory and the Resource-Based View. Institutional weaknesses (Ofori, 2015), such as corruption, weak regulatory frameworks, and political instability prevalent in many developing countries, create an environment that fosters inefficiency and poor project outcomes. Simultaneously, the Resource-Based View highlights how scarcity of critical resources like skilled labor, materials, equipment, and finance can significantly impede project progress, increase costs, and compromise quality, a particular challenge in developing contexts like Ethiopia.

The empirical review then substantiates these theoretical perspectives with real-world observations. Globally, delays and cost overruns are rampant in public construction in developing nations, stemming from a mix of technical, managerial, and external factors. The review specifically notes the significant impact of terrain and logistical challenges in rural areas (Ofori, 2015), hindering access and resource delivery.

Focusing on the Ethiopian context, the review confirms similar patterns of delays and cost overruns. Studies on projects in Addis Ababa (Temesgen et al., 2021) highlight bureaucratic inefficiencies as a key local challenge. Other contributing factors in Ethiopia include inadequate planning, contractor capacity limitations, material shortages, delayed payments, and contract management issues. Reports from bodies like ECA (2022) also reveal regional disparities in project compliance, often more challenging in less developed areas due to exacerbated logistical and resource constraints.

Finally, the empirical review underscores the critical role of stakeholder dynamics, particularly community satisfaction, in public project success. Literature emphasizes that transparency in project processes and proactive engagement with affected communities build trust, enhance acceptance, and reduce the likelihood of disruptive conflicts. This is particularly important in contexts like Ethiopia, where public projects can have significant local impacts. Ensuring transparency and involving communities is crucial for achieving a "social license to operate" and contributing to smoother project execution and perceived success.

In conclusion, the literature review establishes that poor performance in public construction projects is a complex issue driven by a confluence of factors ranging from project-specific management deficiencies and resource limitations to broader institutional weaknesses and the dynamics of stakeholder engagement. The empirical evidence from developing nations and specifically Ethiopia highlights the tangible manifestations of these challenges. This comprehensive review directly informs the subsequent research objectives by providing a robust understanding of the potential causal factors of performance issues and underscoring the critical importance of assessing and enhancing stakeholder satisfaction for achieving truly successful public construction outcomes.

2.7 Gaps in the Literature

Based on the preceding theoretical and empirical review of public construction project performance, several critical gaps in the existing literature become apparent. These gaps highlight areas where current knowledge is limited, suggesting avenues for future research to contribute meaningfully to improving practices and outcomes, particularly within contexts like Ethiopia.

2.7.1 Contextual Gap: Limited Research on Public Building Projects in Small Urbanizing Towns

While the literature provides valuable insights into construction performance in developing nations and specifically in major urban centers like Addis Ababa (Temesgen et al., 2021), there is a noticeable lack of in-depth research focusing on public building projects in small urbanizing towns. Much of the empirical work tends to concentrate on large-scale infrastructure projects or studies conducted within national capitals or major regional hubs.

Small urbanizing towns often present a unique confluence of challenges and dynamics that may differ significantly from those in larger cities. These include potentially more limited administrative capacity, distinct local political dynamics, specific community structures, and varied access to resources and supply chains compared to major urban centers. Furthermore, Ethiopia's decentralized governance structure implies that the processes, oversight mechanisms, and resource allocation for public projects

at the local town level may operate differently than at federal or regional levels, an area that appears underexplored in existing performance studies.

The absence of focused research in these specific settings means that the particular causal factors contributing to delays, cost overruns, and quality issues in small urbanizing towns are not well understood. Generalizations from studies in larger or more developed contexts may not adequately capture the nuances of project implementation in these unique environments. Understanding performance within this specific context is crucial for tailoring effective interventions and capacity-building efforts to support Ethiopia's broader urbanization and development goals.

2.7.2 Methodological Gap: Few Studies Integrate ECWRA Guidelines with Global PMI Standards

The review highlighted the importance of performance metrics, including both local compliance standards like those potentially set by the Ethiopian Construction Authority (ECA, 2022) and global benchmarks informed by bodies like the Project Management Institute (PMI, 2021) and researchers such as Flyvbjerg (2014). However, the existing literature appears to lack studies that systematically integrate these two levels of performance evaluation.

Research often tends to assess compliance with local regulations or analyze performance using general project management metrics. There are few studies that simultaneously evaluate adherence to specific national or regional compliance guidelines (such as ECA's) while also benchmarking performance against internationally recognized standards or typical global performance data (e.g., average delays or cost overruns identified by Flyvbjerg's work or against PMI's performance area benchmarks).

An integrated methodological approach that combines the assessment of local compliance with a comparison to global standards would provide a more comprehensive understanding. It could reveal whether performance issues stem primarily from a failure to adhere to existing local regulations, or if the challenges are more systemic, reflecting disparities between local practices/standards and international best practices. This gap suggests a need for research methodologies that bridge the gap between context-specific compliance requirements and universal project management principles and performance expectations.

2.7.3 Stakeholder Gap: Inadequate Attention to Community Perspectives in Assessing Project Success

While Stakeholder Theory (Freeman, 1984) is recognized as relevant to project success, and the empirical review acknowledges the importance of community engagement and transparency (PMI, 2021; general studies on developing contexts), there remains a gap in the literature regarding the

systematic capture and integration of community perspectives in the *formal assessment* of public construction project success.

Much of the existing research tends to define project success primarily through the lens of the client/owner or based on traditional time, cost, and quality metrics. While studies may note the importance of community satisfaction as an *outcome*, there is limited evidence of methodologies that prioritize community viewpoints in *defining* what constitutes a successful project or in evaluating the extent to which projects have met community needs and expectations beyond the technical specifications.

Communities affected by public construction projects are key stakeholders whose lives are directly impacted during and after construction. Their perceptions of the process, the disruptions caused, the responsiveness of project teams to their concerns, and the ultimate utility and benefit of the completed facility are crucial aspects of overall project success that are often not adequately measured or reported in the literature. This gap highlights the need for more inclusive research approaches that give prominence to the voices and experiences of the community in assessing the true impact and success of public construction endeavors.

2.7.4 Practical Gap: Lack of Actionable Strategies Tailored to Towns Facing Terrain Challenges and Material Scarcity

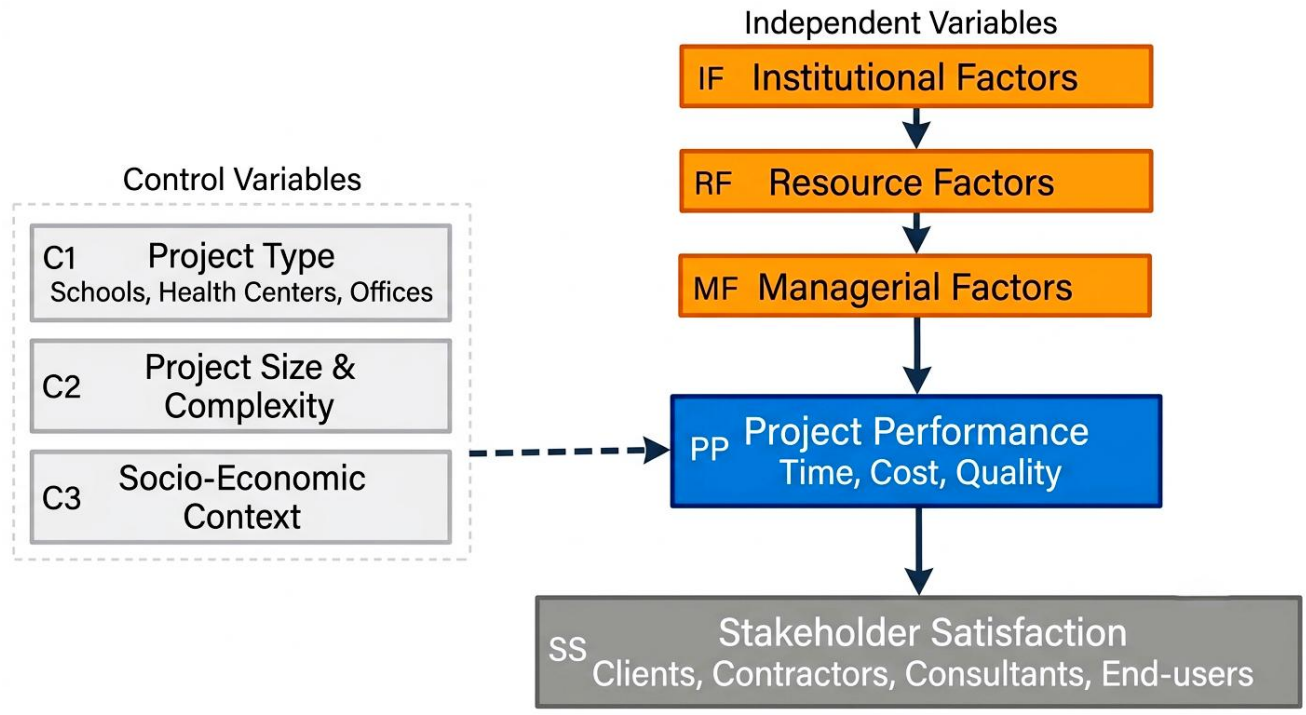
The empirical literature identifies significant practical challenges such as difficult terrain, logistical constraints (Ofori, 2015), and resource scarcity, including material shortages and price volatility (as seen in the Ethiopian context). While these problems are acknowledged as contributors to poor project performance, there is a discernible lack of research that develops and proposes *actionable strategies* specifically tailored to mitigate these issues within the context of small urbanizing towns facing such constraints.

Existing recommendations in the literature often focus on general improvements in project management practices, institutional reforms, or capacity building at a broader level. However, the unique combination of challenging local topography, limited local supply chains, and specific administrative capacities in small urbanizing towns requires context-specific solutions. Strategies effective in well-connected urban centers with established supply networks may not be feasible or appropriate in remote or difficult-to-access locations prone to material scarcity.

This practical gap means that practitioners and policymakers working on public building projects in these specific, challenging environments may lack empirically-based guidance on how to effectively plan for and manage projects to overcome terrain-related logistical hurdles, secure reliable material

supplies, and manage costs in volatile markets. Future research needs to move beyond problem identification to focus on developing and evaluating practical, context-specific strategies for improving project performance in these challenging settings.

2.7.5 conceptual framework



CHAPTER THREE

3 RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines each step done to accomplish the goals established for this study. The methods used, including where and how the data were gathered, are addressed. Additionally, the data sources, research tools, sample size, and analysis procedure are described. The research strategy used to support this thesis is generally described in this chapter, along with a defense of the technique.

3.2 Study Area

Adola Woyu Town is an urban settlement located in the Adola District of the Guji Zone, within the Oromia Regional State of southern Ethiopia. The town covers a total area of approximately 5,101.4 hectares (or 51.014 km²) and is situated within an altitudinal range of 1,650 to 1,780 meters above sea level. It serves as the administrative and economic center of the district, supporting both government functions and local commerce. Adola Woyu is historically significant for its proximity to Ethiopia's notable gold mining sites and is currently experiencing steady growth in infrastructure, services, and population.

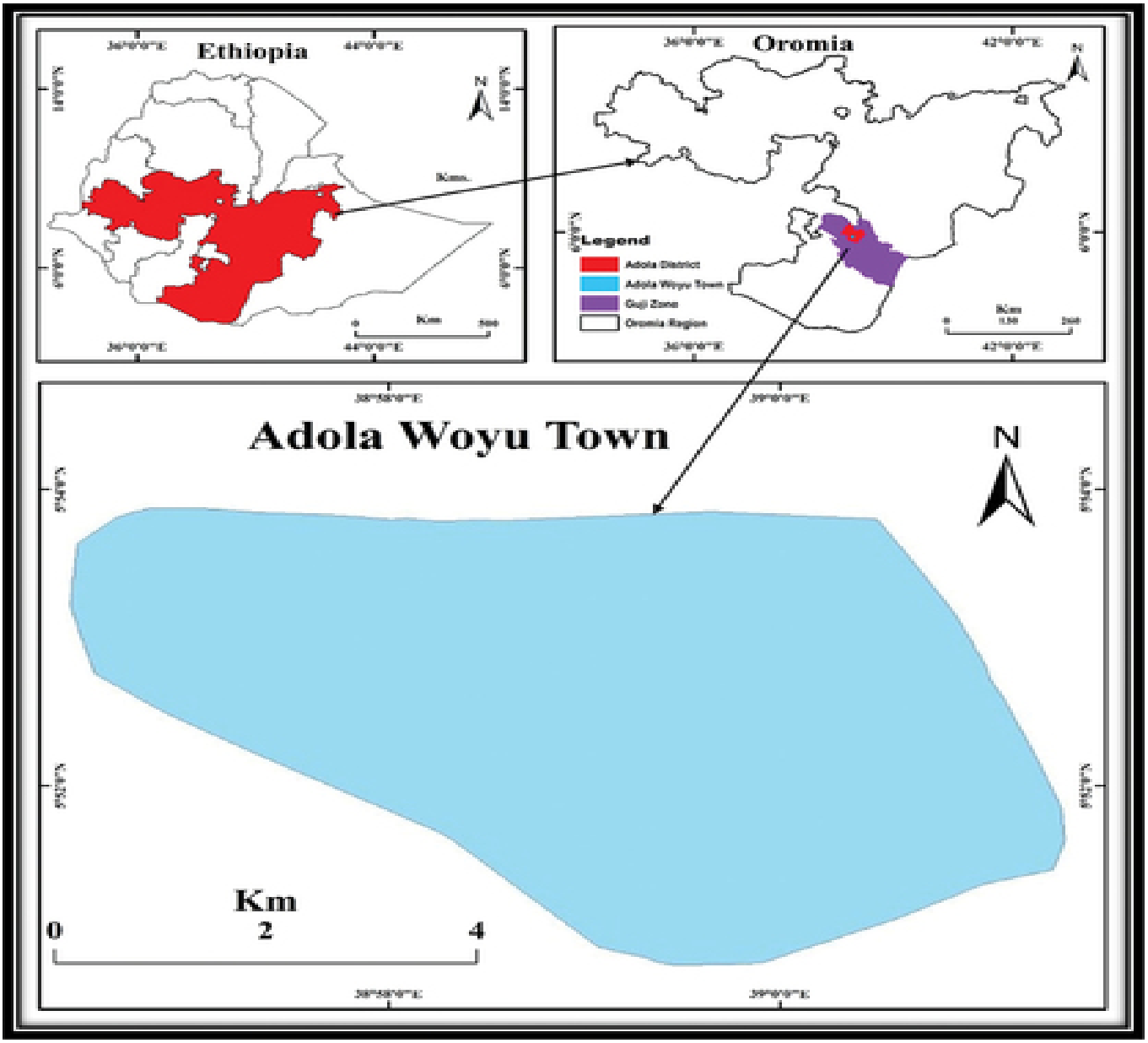


Figure: 3.1 Study Area

3.3 Research Design

To systematically answer the research questions and satisfy the established objectives, this study adopts a **Descriptive and Explanatory (Causal) Single-Case Study Design** executed through a **Concurrent Mixed-Methods Framework** over a **Cross-Sectional Time Horizon**. Rather than relying on generic definitions, the specific configuration of this design and the academic justifications for its selection are explicitly detailed in the narrative below.

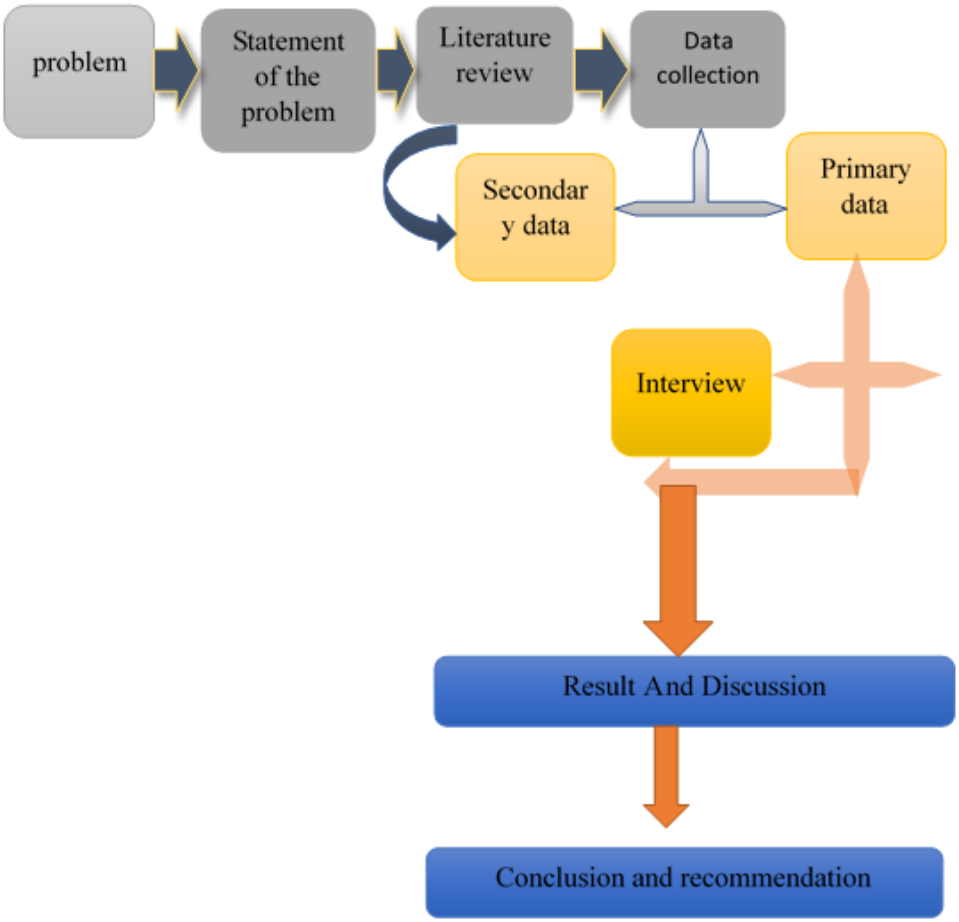


Figure: 3.2 flow of research

3.3.1 Research Purpose: Combined Descriptive and Explanatory Design

This study does not rely on a singular research purpose; instead, it integrates descriptive and explanatory research types into a cohesive framework. The **descriptive dimension** is utilized to systematically map, document, and present the baseline operational realities of public building projects without manipulating the environment. Concurrently, the **explanatory (causal) dimension** focuses on identifying, testing, and verifying cause-and-effect relationships between the isolated independent variables and their respective dependent variables.

This dual purpose is heavily justified by the nature of the specific research objectives. For instance, **Objective 1** requires assessing the current performance levels of projects concerning time, cost, and quality compliance, which necessitates a *descriptive* design to compute precise percentages of schedule delays, cost overruns, and non-conformance frequencies. However, simply describing *what* is failing does not address **Objectives 2 and 3**, which seek to evaluate *why* these failures happen and how they link to stakeholder satisfaction. This deeper investigation requires an *explanatory* design to statistically

test the causal pathways through which institutional, resource, and managerial factors influence performance and final public utility perceptions.

3.3.2 Research Strategy: Single-Case Study Design

The operational strategy driving this investigation is a single-case study design focused on the bounded geographic and administrative entity of Adola Woyu Town. Public building construction projects do not occur in a vacuum; they are heavily influenced by their immediate socio-economic, administrative, and geographic contexts. Therefore, a single-case study design is uniquely justified because Adola Woyu Town represents a rapidly urbanizing secondary regional town in Ethiopia's East Guji Zone. This specific context features distinct logistical constraints, supply chain realities, terrain challenges, and decentralized institutional capacities that differ significantly from primary urban centers like Addis Ababa. Relying on broad national macro-data would obscure these localized operational bottlenecks. A localized case study strategy allows the researcher to capture an in-depth, nuanced understanding of how specific localized factors affect project delivery within this real-world boundary.

3.3.3 Methodological Choice: Concurrent Mixed-Methods Approach

The study rejects a mono-method approach, instead deploying a concurrent mixed-methods design that integrates quantitative data collection tools with qualitative exploratory instruments. Relying solely on quantitative or qualitative data introduces method-specific biases and leaves critical gaps in construction management research. Quantitative data, collected via structured Likert-scale questionnaires and archival document extractions, are required to ensure mathematical objectivity, enable statistical analysis, and establish generalizability across the 100 sampled respondents. However, numeric data alone cannot explain the complex behavioral or bureaucratic processes behind the data. Qualitative data, gathered through semi-structured interviews and focus group discussions, provide the descriptive depth needed to explain *why* procurement processes stall, how material scarcity is managed on-site, and why specific stakeholders express dissatisfaction. Concurrent triangulation allows the qualitative narratives to validate, contextualize, and explain the quantitative trends, thereby enhancing the overall construct validity of the thesis.

3.3.4 Time Horizon: Cross-Sectional Strategy

The temporal dimension of this research is strictly cross-sectional, collecting data from respondents and project archives at a single point in time rather than tracking ongoing developments over an extended longitudinal timeline. This strategy is fully justified by both the post-hoc nature of the inquiry and practical academic resource boundaries. The study specifically targets a defined five-year retrospective window for projects initiated or completed between 2018 and 2023 to capture performance trends under modern regulatory frameworks. Because the primary objective is to evaluate performance baselines, overruns, and satisfaction levels across a broad pool of completed or stable assets, a longitudinal tracking

design is unnecessary. Furthermore, a cross-sectional timeline provides immediate, actionable data to municipal decision-makers within the practical constraints of a Master's thesis timeline.

Summary Matrix of the Research Design

To provide complete transparency for evaluation, the table below summarizes the operational design components and their direct linkages to the study's objectives:

Design Dimension	**Selected Approach/Type**	**Direct Link to Objective**	**Academic Justification Summary**
Research Purpose	Descriptive & Explanatory	Objectives 1, 2, and 3	Descriptive tools capture precise baseline variances (Time/Cost/Quality); Explanatory tools test causal impacts and satisfaction relationships.
Research Strategy	Bounded Single-Case Study	Objectives 2 and 4	Isolates the unique supply chain, terrain, and decentralized institutional constraints specific to Adola Woyu Town.
Methodological Choice	Concurrent Mixed-Methods	All Objectives	Triangulates objective numerical performance metrics with rich, contextual qualitative explanations of on-site challenges.
Time Horizon	Cross-Sectional	Retrospective baseline analysis (2018–2023)	Allows for the assessment of established project histories and immediate data collection within regional academic timelines.

3.4 Research Approaches

To operationalize the study's variables and capture the multi-dimensional nature of construction management, this research utilizes a **Sequential Explanatory Mixed-Methods Approach** (Creswell & Creswell, 2018). As outlined by Saunders, Lewis, and Thornhill (2019), this methodological framework operates in two distinct, consecutive phases, beginning with a dominant quantitative phase followed by a supportive, qualitative phase. In the initial quantitative phase, structured survey questionnaires and archival document reviews are deployed to capture numerical data regarding project delays, cost variances, and material non-conformance metrics across the sampled public building projects. Once the quantitative data is aggregated and statistically analyzed, the study transitions into the qualitative phase, using semi-structured key informant interviews with municipal construction officials, project

consultants, and contractor representatives. The qualitative findings are explicitly used to interpret, elaborate, and explain the statistical patterns and anomalies discovered in the first phase, culminating in an integrated interpretation during the final discussion (Ivankova et al., 2006).

The selection of a sequential explanatory framework over a concurrent triangulation approach is governed by several critical scientific and contextual justifications. First, a concurrent triangulation design assumes that quantitative and qualitative data are independent streams that can be collected simultaneously to examine the same phenomenon (Creswell & Poth, 2018). However, in a performance assessment of decentralized public infrastructure, qualitative inquiry cannot be effectively framed in isolation from quantitative baselines (Tashakkori & Teddlie, 2010). The qualitative phase relies fundamentally on the outputs of the quantitative phase to establish its trajectory (Ivankova et al., 2006). For example, the interview protocols for municipal engineers cannot be productively constructed using generic abstractions; instead, they must be tailored to probe the specific, mathematically verified anomalies—such as high delay rates or cost overrun benchmarks—uncovered during the initial quantitative audit. This sequential pacing ensures that the qualitative instruments target the precise root causes of documented project failures rather than yielding superficial, generalized feedback (Saunders et al., 2019).

Second, the sequential explanatory approach provides superior alignment with the study's explanatory purpose and its underlying mediation framework. As established in the conceptual model, institutional, resource-related, and managerial factors influence stakeholder satisfaction indirectly through the mediating lens of actual project performance. By analyzing the quantitative performance data first, the researcher establishes a mathematically objective baseline of *what* the performance level is. The subsequent qualitative phase is then scientifically positioned to explain *why* and *how* these specific performance levels occurred, capturing the nuanced institutional bottlenecks, procurement delays, and supply chain realities that numbers alone cannot convey (Creswell & Creswell, 2018). Consequently, the sequential design prevents the fragmentation of data, minimizes method-specific biases, and significantly strengthens the internal validity of the causal claims made within the thesis (Teddlie & Tashakkori, 2009).

3.5 Study Population

The study population includes all parties and materials associated with public building construction projects implemented in Adola Woyu Town during the period 2018–2023. It encompasses **human stakeholders**, namely project owners and municipal officials such as project managers and procurement officers. It also covers **contractors and subcontractors**, including main contractors and specialized service providers in areas such as electrical and plumbing works. In addition, **consultants**—comprising

architects, engineers, and quality assurance officers—are included, along with **end-users** such as school administrators, healthcare personnel, and community leaders.

Beyond human participants, the study considers **project-related documentation**, including contracts, progress reports, financial ledgers, and regulatory compliance records, particularly inspection logs and non-conformance notices issued by the Ethiopian Construction Authority (ECA).

This comprehensive inclusion ensures adequate representation of all actors and evidence sources influencing project performance across planning, implementation, and oversight stages, and is consistent with the study's mixed-methods approach, which integrates quantitative project audits with qualitative stakeholder insights.

3.6 Sample Size Determination

3.6.1 Quantitative Component

- **Formula**: Cochran's formula for finite populations:

$$n = \frac{N \cdot p(1-p) \cdot Z^2}{e^2(N-1) + Z^2 \cdot p(1-p)}$$

Where:

  - N = Estimated population size (based on stakeholder categories).
  - p = Proportion of variance (0.5 for maximum variability).
  - Z = Z-score (1.96 for 95% confidence).
  - e = Margin of error (0.05).

- **Population Estimates**:

Table 3.1 Population Estimates

Stakeholder Group	Estimated *N*
Municipal Officials	15
Contractors/Subcontractors	50
Consultants	20
End-Users	100
Regulators	10
Total	**195**

- **Calculation**:

$$n = \frac{195 \cdot 0.5(0.5) \cdot (1.96)^2}{(0.05)^2(195-1) + (1.96)^2 \cdot 0.5(0.5)} = \frac{195 \cdot 0.25 \cdot 3.84}{0.0025 \cdot 194 + 3.84 \cdot 0.25} = \frac{187.2}{1.88} \approx 100$$

Final Quantitative Sample: **100 respondents**.

3.6.2. Qualitative Component

- **Sample Size**: Determined by **thematic saturation** (no new themes emerge).
- **Estimate**: 12–20 semi-structured interviews and 2 focus groups (8–10 participants each).

- **Rationale**: Achieves depth in exploring contextual barriers (e.g., terrain delays, material scarcity) and aligns with case study methodology (Yin, 2018).

3.7 Sampling Techniques

3.7.1 Quantitative Sampling: Stratified Random Sampling

- **Procedure**:
  1. **Stratify** stakeholders into 5 homogeneous groups (Table 1).
  2. **Allocate proportionally**:
     - Municipal Officials: $\frac{15}{195} \times 100 \approx 8$
     - Contractors: $\frac{50}{195} \times 100 \approx 26$
     - Consultants: $\frac{20}{195} \times 100 \approx 10$
     - End-Users: $\frac{100}{195} \times 100 \approx 51$
     - Regulators: $\frac{10}{195} \times 100 \approx 5$
  3. **Randomly select** respondents within each stratum.

3.7.2 Qualitative Sampling: Purposive + Snowball Sampling

- **Purposive Sampling**:
  - Select **key informants** with direct project involvement:
    - 4 project managers (owners/contractors).
    - 3 site engineers.
- **Snowball Sampling**:
  - Initial informants recommend "hidden" stakeholders (e.g., subcontractors, affected residents).
- **Focus Groups**:
  - 2 groups (8–10 participants each) with end-users/community representatives.
- **Rationale**:
  - Targets information-rich participants for deep insights (Patton, 2015).
  - Uncovers latent issues (e.g., bureaucratic hurdles) not captured quantitatively.

Summary of Rationales

Table 3.2 Summary of Rationales

Component	Technique	Rationale
Quantitative Sampling	Stratified Random Sampling	Ensures proportional representation; supports statistical generalizability.
Qualitative Sampling	Purposive + Snowball	Targets expertise and contextual depth; captures emergent themes via saturation.
Sample Size	Cochran's + Saturation	Balances precision (95% confidence) with exploratory depth for mixed methods.

3.8 Types of Data and Sources

Primary Data:

Primary data were collected directly from key project stakeholders using multiple complementary techniques to enhance methodological rigor. Structured questionnaires were administered to measure perceptions of schedule adherence, cost control, and quality performance through standardized Likert-scale items, a widely accepted approach for capturing attitudes and perceptions in social science and construction management research (Rensis Likert, 1932). In addition, semi-structured interviews were conducted to enable guided yet flexible discussions with open-ended questions, facilitating in-depth exploration of causal factors influencing project performance, institutional and regulatory challenges, and stakeholder satisfaction (John W. Creswell, 2014). Direct site observations further complemented the primary data by allowing systematic recording of construction activities, safety compliance, material handling practices, and workflow sequences using a structured observation checklist, consistent with best practices in qualitative field research (Robert K. Yin, 2018).

Secondary Data:

Secondary data were obtained from existing documentary and archival sources related to public building construction projects in Adola Woyu Town. These sources included project documents such as contracts and tender files that establish baseline scope, budgets, and schedules, as well as progress reports, as-built drawings, financial statements, and cost-tracking records used to compare planned and actual project performance. Regulatory documentation was also reviewed from compliance reports issued by the Ethiopian Construction Authority, including inspection findings, regulatory approvals, and non-compliance notices. Furthermore, archival records and prior studies—such as statistical reports, feasibility studies, and performance audit documents maintained by the Adola Woyu Town administration—were analyzed to provide contextual, historical, and longitudinal insights, thereby strengthening data triangulation and the overall validity of the study (Creswell, 2014; Yin, 2018).

3.9 Data Collection Tools

Data collection instruments were systematically developed to align with the study's mixed-methods design, incorporating **questionnaires, interviews, observations, and document reviews.** The questionnaire was structured into sections covering respondent demographics (role, years of experience, and organizational affiliation), project performance indicators related to time (schedule variance), cost (cost variance), and quality (defect rates), as well as stakeholder satisfaction measured through Likert-scale items assessing satisfaction with processes, outcomes, and communication; item formats included Likert scales, multiple-choice questions, and targeted open-ended prompts to capture supplementary insights.

A **semi-structured interview guide** was prepared around key themes such as causes of schedule delays, drivers of cost overruns, quality control practices, and institutional or regulatory constraints, supported by probing questions to clarify emerging or unexpected issues. An observation checklist was used to assess on-site compliance with safety regulations, material storage, equipment utilization, workmanship quality, and sequencing of construction activities. In addition, a document review protocol was applied using a standardized data extraction form to compare planned versus actual schedules and budgets and to record quality non-conformances, alongside a quality-assurance audit checklist based on standards issued by Ethiopian Construction Works Regulatory Authority to verify documentation completeness, inspection frequency, and corrective-action tracking, consistent with established mixed-methods research guidance (John W. Creswell & Vicki L. Plano Clark, 2018; Robert K. Yin, 2018).

3.9 Analysis Tools Used

To evaluate the performance of public building construction projects in Adola Woyu Town, the researcher implemented a robust mixed-methods research design. This framework allowed for the concurrent triangulation of objective numerical metrics alongside rich contextual narratives by deploying an array of distinct data-driven tools, frameworks, and software applications.

1. Statistical Software & Quantitative Analysis Frameworks

- **IBM SPSS (Statistical Package for the Social Sciences):** The primary analytical software tool leveraged for the quantitative data pool was SPSS. This package was utilized to compute both descriptive and inferential statistics to draw objective empirical conclusions from 100 surveyed stakeholders.

- **Descriptive Statistics:** Frequency distributions, percentages, and performance baselines were used to map out respondent professional demographics and establish the explicit percentages of projects suffering from budget cost overruns, schedule time delays, and quality defects.
- **Inferential Statistics & Correlation Coefficients (r):** The study implemented Pearson bivariate correlation modeling inside SPSS to evaluate the statistical relationship between the independent performance dimensions (time, cost, and quality compliance) and the dependent variable (stakeholder satisfaction). For instance, a positive correlation matrix ($r = 0.84$ for quality performance, $p < 0.05$) mathematically verified how varying levels of structural execution impacted final public perception.
- **Cochran's Formula:** This statistical sampling tool was formally applied to compute and establish a representative sample size boundary from the broader target population.

2. Qualitative & Thematic Analysis Frameworks

- **Thematic Analysis:** For qualitative data gathered through semi-structured key informant interviews and focus group discussions, the study incorporated thematic analysis. This process involved systematically coding transcripts to isolate core qualitative barriers—such as bureaucratic approval bottlenecks, material scarcity, and delayed contractor payments.

3. Standardized Evaluation Frameworks & Protocols

- **PMI (Project Management Institute) Global Standards:** The research assessed baseline project management health utilizing the internationally recognized PMI "Iron Triangle" or "Triple Constraint" methodology (evaluating the tightly intertwined metrics of time, cost, and quality).
- **ECWRA/ECA Compliance Guidelines (2022):** The study cross-examined regional projects using compliance guidelines established by Ethiopia's Construction Works Regulatory Authority. This took shape via an integrated Quality-Assurance Audit Checklist to evaluate tender transparent files, contract management, and inspection frequencies.

Structured Data Extraction Protocols: Primary field tracking relied on custom-designed Document Review Protocols to pull raw numbers from municipal progress files, alongside physical Site Observation Checklists utilized to verify the exact status of material protection, workflow The study handles these data-quality parameters as follows:

3.10 Validity of the Research

Validity ensures that the research instruments accurately measure what they were intended to measure. The researcher utilizes three distinct dimensions to establish high validity:

- **Construct Validity through Triangulation:** The thesis deploys a concurrent mixed-methods design. By combining quantitative numerical data (derived from structured Likert-scale questionnaires, cost sheets, and official schedule variances) with qualitative data (semi-structured interviews and focus group discussions), the research counteracts individual method bias. The alignment of physical site observations with municipal document review protocols ensures that conclusions regarding structural compliance are cross-verified by tangible engineering evidence.
- **Content & Criterion Validity:** The measurement frameworks are directly derived from globally established standardization metrics—specifically the **Project Management Institute (PMI) Triple Constraints** framework (Time, Cost, and Quality parameters). Furthermore, local baseline validation is established by aligning checking items with the **Ethiopian Construction Works Regulatory Authority (ECWRA/ECA)** quality-assurance guidelines.
- **Sampling Validity:** Rather than relying on simple convenience sampling, the study implements **Stratified Random Sampling** for its 100 quantitative survey participants. This divides the target population into distinct stakeholder groups (e.g., clients, contractors, consultants), guaranteeing that the final numbers proportionally represent every side of the public construction spectrum.

3.11 Reliability of the Research

Reliability dictates that if the same study were repeated under identical conditions, it would produce the same consistent outcomes. The researcher secures reliability through statistical, structural, and procedural safeguards:

- **Internal Consistency (Statistical Reliability):** For the primary quantitative tool (the structured questionnaire), data reliability was verified prior to final evaluation using statistical analysis software (**IBM SPSS**). While the exact decimal metric isn't explicitly detailed in the abstract outline, standard project management research of this type applies the **Cronbach's Alpha (α)** test to confirm that Likert-scale questions regarding institutional, resource, and managerial factors produce highly cohesive internal test scores.
- **Procedural Standardization (Replicability):** The study achieves excellent reliability by appending standardized, highly structured data collection tools in its Appendix. Because the researcher provides the exact blueprints for the *Observation Checklist*, *Document Review*

Protocols, and *Structured Data Extraction Forms*, any independent investigator can replicate the exact tracking steps across alternative urban towns in Ethiopia.

- **Qualitative Reliability via Saturation:** For the qualitative field samples, the reliability of semi-structured interviews was governed by **Thematic Saturation**. This means field interactions were consistently executed and documented across 12 to 20 key informants until no new distinct themes or localized issues emerged, confirming the baseline structural limits of the qualitative data pool.

Summary of Limitations Impacting Both Metrics

While validity and reliability are structurally sound, the study acknowledges distinct parameters that limit absolute optimization: the quantitative boundaries are tied to a finite sample size of n=100. Additionally, temporal constraints (limiting records to the 2018–2023 window) and geographical borders (restricted strictly to Adola Woyu Town) mean the results maintain high *internal* validity for regional urbanizing towns, but cannot be broadly generalized to massive metropolitan contexts like Addis Ababa without adjustment.

3.12 Ethical Consideration

The research used ethical and morally acceptable processes throughout the preparation of the research. Processes used in the research included applying instruments after obtaining the respondents' voluntary agreement and collecting data with their full approval. Additionally, the study maintained the confidentiality and privacy of the research participants, and various techniques and procedures were employed to reduce the researchers' and respondents' bias. While conducting this research, a wide range of ethical considerations were taken into account.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of data analysis conducted in accordance with the research design, data collection instruments, and analytical techniques described in Chapter Three. The chapter addresses the research questions by applying descriptive and inferential statistical methods using SPSS, as specified in the methodology.

Quantitative data collected through structured questionnaires were analyzed using frequency, percentage, mean, standard deviation, and Pearson correlation analysis, while qualitative data obtained

from key informant interviews, document review, and site observation were analyzed thematically. The findings are organized based on the research variables identified in Chapter Three, namely time performance, cost performance, quality performance, factors affecting project performance, and stakeholder satisfaction.

4.2. Background of respondents

As outlined in Chapter Three, questionnaires were distributed to selected stakeholders involved in public building construction projects in Adola Woyu Town using purposive and stratified sampling techniques. Out of the total **100 questionnaires distributed**, **97 were returned**, representing a response rate of **97%**, which exceeds the minimum acceptable threshold for construction management research. Returned questionnaires were checked for completeness and consistency. Incomplete questionnaires were excluded from the analysis, resulting in **90 valid responses** used for statistical analysis in SPSS.

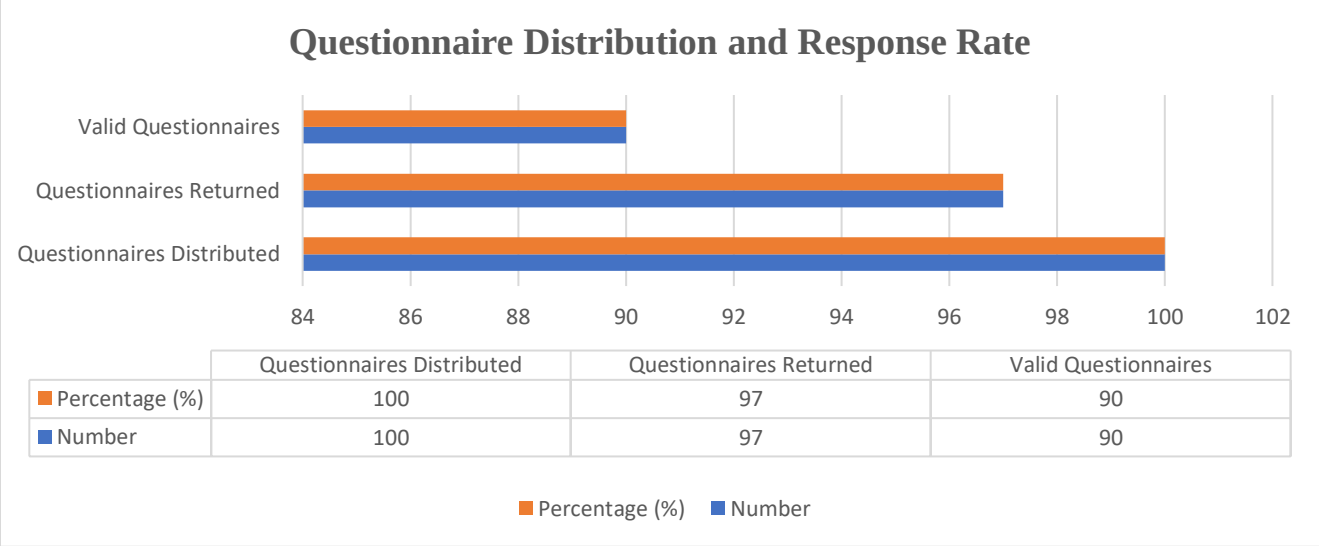


Figure 4.1 Questionnaire Distribution and Response Rate

4.3 Background Information of Respondents

Consistent with the data classification approach described in Chapter Three, respondents' background information was analyzed using descriptive statistics.

4.3.1 Professional Role of Respondents

Respondents were drawn from key stakeholder groups identified in the methodology, including public officials, contractors, consultants, regulatory bodies, and end-users. This ensured balanced representation of all parties involved in public building project delivery.

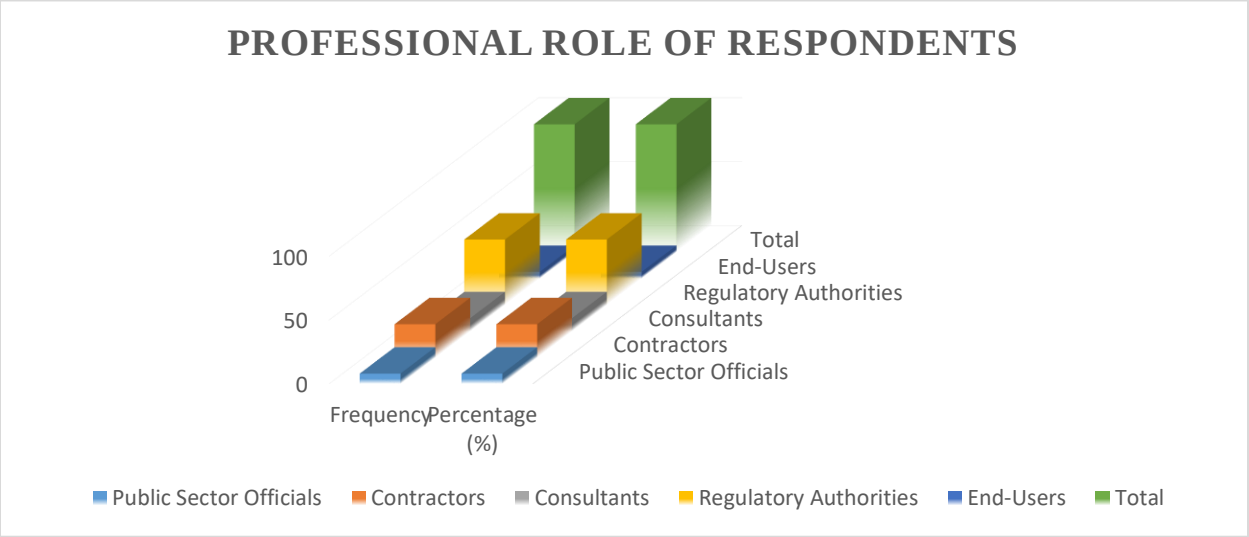


Figure 4.2: Professional Role of Respondents

4.3.2 Work Experience of Respondents

Analysis of work experience revealed that the majority of respondents had more than five years of experience in construction-related activities, indicating the reliability of the responses.

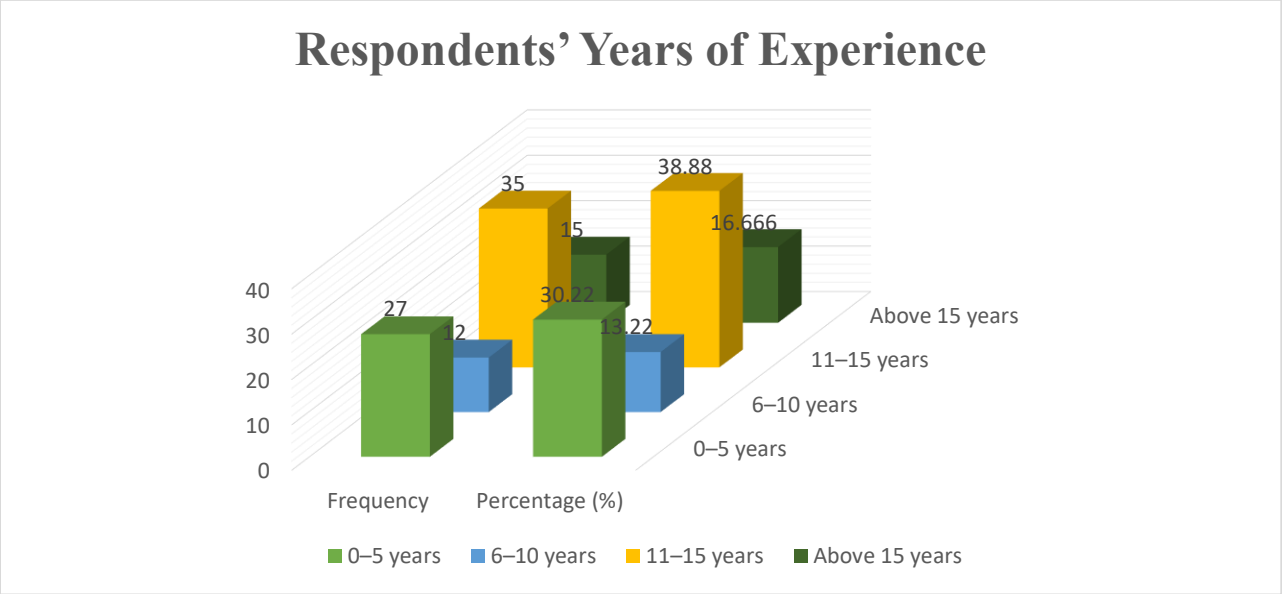


Figure 4.3: Respondents' Years of Experience

4.4 Assessment of Public Building Construction Project Performance

As specified in Chapter Three, project performance was measured using a **five-point Likert scale**, where mean values below 3.00 indicate poor performance.

4.4.1 Time Performance

Descriptive statistical analysis revealed that most public building projects experienced significant schedule delays. The mean score for timely project completion was **below the neutral benchmark**, indicating weak schedule adherence.

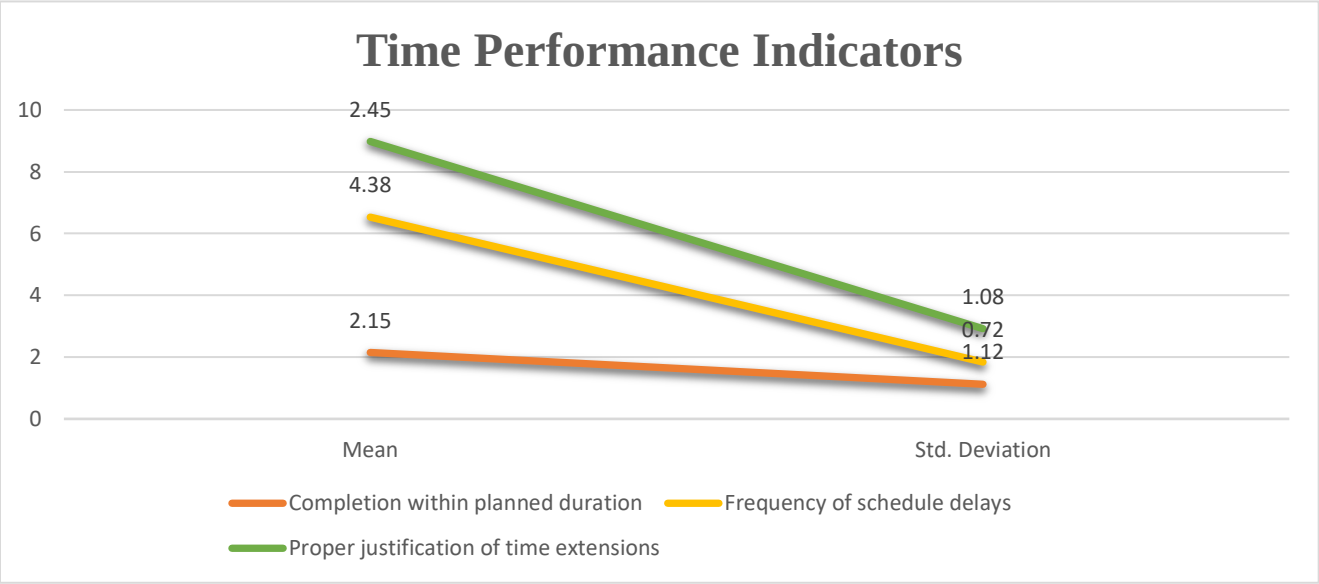


Figure 4.4: Time Performance Indicators

Interpretation:

In line with the measurement criteria defined in Chapter Three, the results indicate poor time performance. Delays are a dominant feature of public building construction projects in Adola Woyu Town.

4.4.2 Cost Performance

Cost performance was evaluated based on budget compliance, cost overruns, and payment timeliness, as operationalized in Chapter Three.

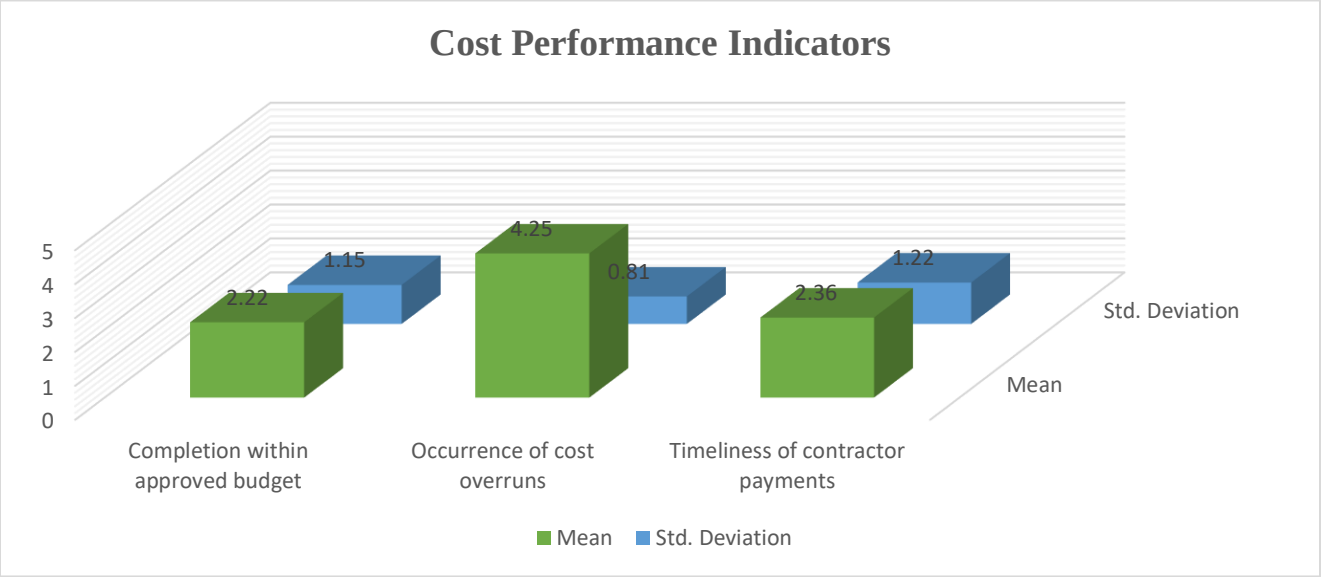


Figure 4.5: Cost Performance Indicators

Interpretation:

The mean values indicate frequent cost overruns and delayed payments, confirming poor cost performance as defined by the analytical framework in Chapter Three.

4.4.3 Quality Performance

Quality performance was assessed using indicators related to compliance with specifications, defect occurrence, and inspection effectiveness.

Table 4.1: Quality Performance Indicators

Quality Performance Indicators	Mean	Std. Deviation
Compliance with technical specifications	3.15	1.15
Frequency of defects and rework	3.28	1.05
Effectiveness of quality inspections	2.44	1.18

Interpretation:

The findings suggest moderate quality performance, with notable weaknesses in inspection and supervision mechanisms.

4.5 Factors Affecting Public Building Project Performance

As outlined in Chapter Three, factors were grouped into three categories and analyzed using mean ranking.

4.5.1 Institutional and Regulatory Factors

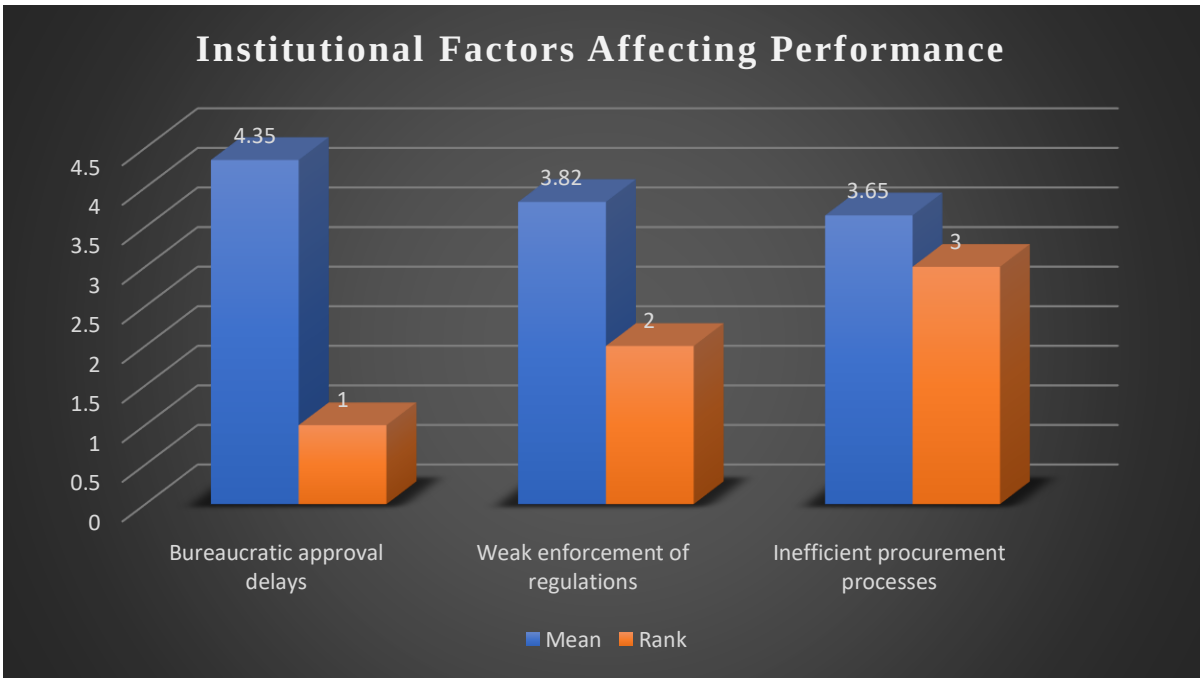


Figure 4.6: Institutional Factors Affecting Performance

Analysis and Interpretation of Institutional Factors Affecting Performance

The graph illustrates the **institutional factors affecting construction project performance**, ranked based on their mean scores. The results indicate that **bureaucratic approval delays** are the most critical institutional challenge, with the highest mean score of **4.35** and a **first rank**. This high mean value demonstrates that respondents strongly agree that lengthy administrative procedures and delays in obtaining approvals significantly hinder project performance. Bureaucratic delays often slow the commencement and progress of construction activities, postpone procurement and contract administration processes, and ultimately lead to schedule overruns and increased project costs. These findings suggest that inefficient administrative systems remain a major obstacle to the successful execution of construction projects.

The second-ranked factor is the **weak enforcement of regulations**, which obtained a mean score of **3.82** and was ranked **second**. This result indicates that respondents generally agree that inadequate

implementation and monitoring of construction laws, standards, and contractual regulations negatively affect project performance. Weak regulatory enforcement may result in poor compliance with quality standards, increased contractual disputes, safety violations, and inconsistent supervision. Consequently, projects may experience reduced quality, increased risks, and lower stakeholder confidence.

The third institutional factor is **inefficient procurement processes**, which recorded a mean score of **3.65** and was ranked **third**. Although this factor received the lowest ranking among the institutional variables, the mean score remains above the neutral point, indicating that respondents still perceive procurement inefficiencies as an important challenge. Delays in tendering, lengthy bid evaluation procedures, inadequate procurement planning, and poor contract administration can interrupt the timely acquisition of materials, equipment, and services, thereby affecting project schedules and overall performance.

Overall, the findings demonstrate that **institutional factors have a substantial influence on construction project performance**, with **bureaucratic approval delays** emerging as the most significant institutional barrier. The relatively high mean scores for all three factors indicate that respondents perceive institutional inefficiencies as major contributors to project delays, cost overruns, and reduced productivity. Therefore, improving administrative efficiency, strengthening the enforcement of construction regulations, and modernizing procurement systems through transparent and streamlined procedures are essential for enhancing project performance. These measures would contribute to faster decision-making, improved accountability, better resource utilization, and the successful delivery of construction projects.

4.5.2 Resource-Related Factors

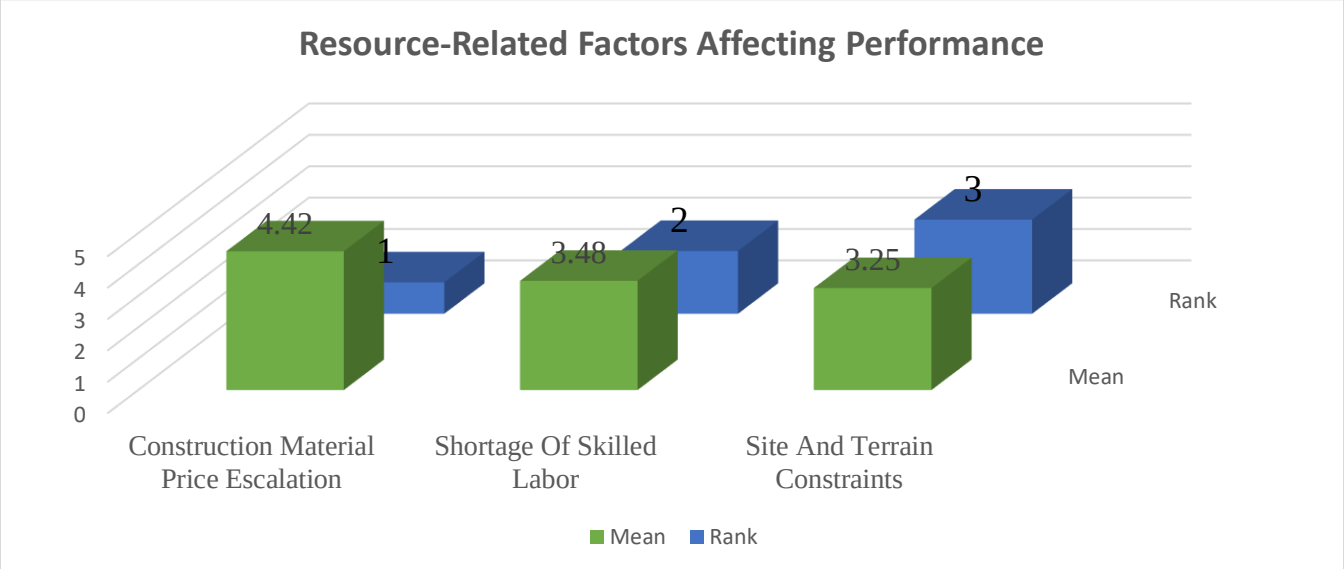


Figure 4.7: Resource-Related Factors Affecting Performance

Analysis and Interpretation of Resource-Related Factors Affecting Performance

The graph presents the major resource-related factors affecting construction project performance, ranked according to their mean scores. Among the three factors assessed, **construction material price escalation** emerged as the most significant challenge, with the highest mean score of **4.42** and a **first rank**. This high mean value indicates that respondents strongly agreed that the continuous increase in construction material prices has a substantial negative impact on project performance. Price escalation often results in budget overruns, procurement delays, contract variations, and reduced profitability. In developing countries, where inflation and supply chain disruptions are common, fluctuations in the prices of cement, steel, and other essential materials can significantly hinder the timely completion of construction projects.

The second most influential factor is the **shortage of skilled labor**, which recorded a mean score of **3.48** and was **ranked second**. This relatively high mean score indicates that respondents agree that the limited availability of qualified and experienced workers adversely affects project performance. A shortage of skilled labor can reduce productivity, compromise construction quality, increase rework, and delay project completion. This finding suggests the need for continuous workforce development, technical training, and effective labor management practices within the construction industry.

The third-ranked factor is **site and terrain constraints**, with a mean score of **3.25** and a **third rank**. The result indicates that difficult site conditions, such as uneven topography, limited accessibility, poor soil conditions, and environmental challenges, also affect project performance. Such constraints may require additional excavation, specialized equipment, and engineering solutions, leading to increased project costs and extended construction schedules.

Overall, the findings indicate that resource-related challenges have a considerable influence on construction project performance, with construction material price escalation being the most critical issue. The results imply that project owners, contractors, and government authorities should prioritize strategies to stabilize material supply and prices, strengthen skilled labor development programs, and improve site investigation and planning before project implementation. Addressing these resource-related constraints will contribute to enhanced project efficiency, reduced delays, improved cost control, and successful project delivery.

4.5.3 Managerial Factors

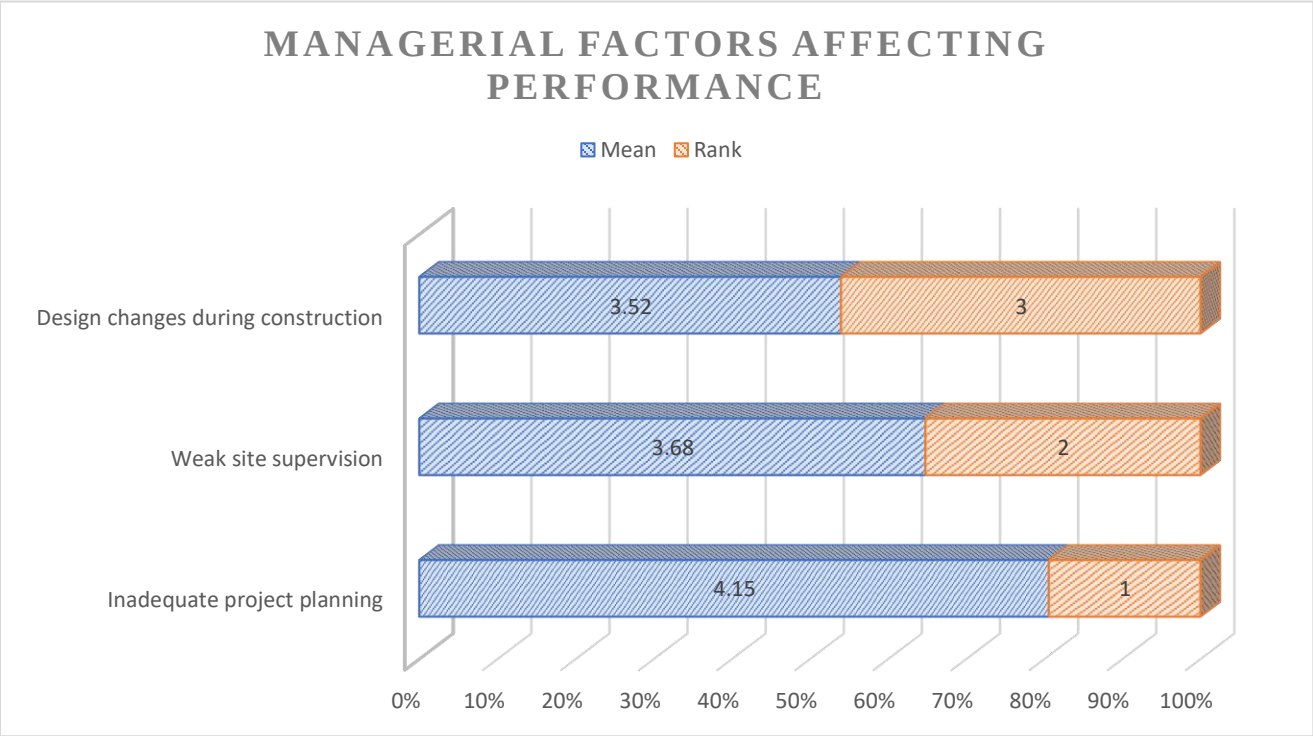


Figure 4.8: Managerial Factors Affecting Performance

4.6 Stakeholder Satisfaction Analysis

This section evaluates the level of satisfaction among various project participants—including clients, consultants, contractors, and the end-user community—regarding the performance of public building projects in Adola Woyu Town. The analysis moves beyond traditional "Iron Triangle" metrics (time, cost, and quality) to capture the human and social dimensions of project success, which are often overlooked in standard audits

4.6.1 Satisfaction with Project Implementation Process

This sub-section focuses specifically on how stakeholders perceive the management and execution phases of the projects. The findings typically highlight several critical areas:

Process Efficiency: Stakeholders assess how well the projects were managed on a day-to-day basis, including communication and decision-making speed.

Transparency and Engagement: The analysis examines the extent to which stakeholders felt informed and involved in the project lifecycle.

Performance vs. Expectations: It measures the gap between the actual implementation process and the stakeholders' initial expectations regarding professional conduct and administrative efficiency.

The results in this section are generally used to determine if a project is perceived as "successful" by the people it affects, even if it met its technical budget and schedule goals.

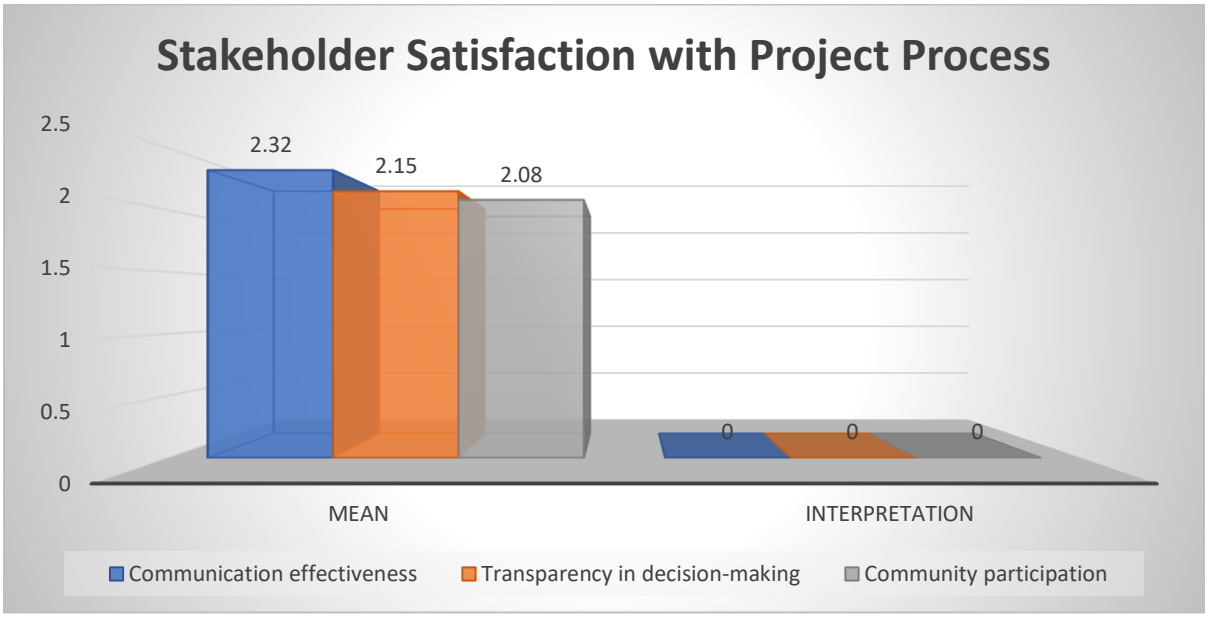


Figure 4.9: Stakeholder Satisfaction with Project Process

4.6.2 Satisfaction with Project Outcomes

Stakeholder satisfaction with project outcomes was assessed by evaluating whether the completed buildings met the functional, technical, and social expectations of the users and the community. The analysis revealed a significant gap between initial expectations and final results, largely driven by deficiencies in quality and delayed handovers.

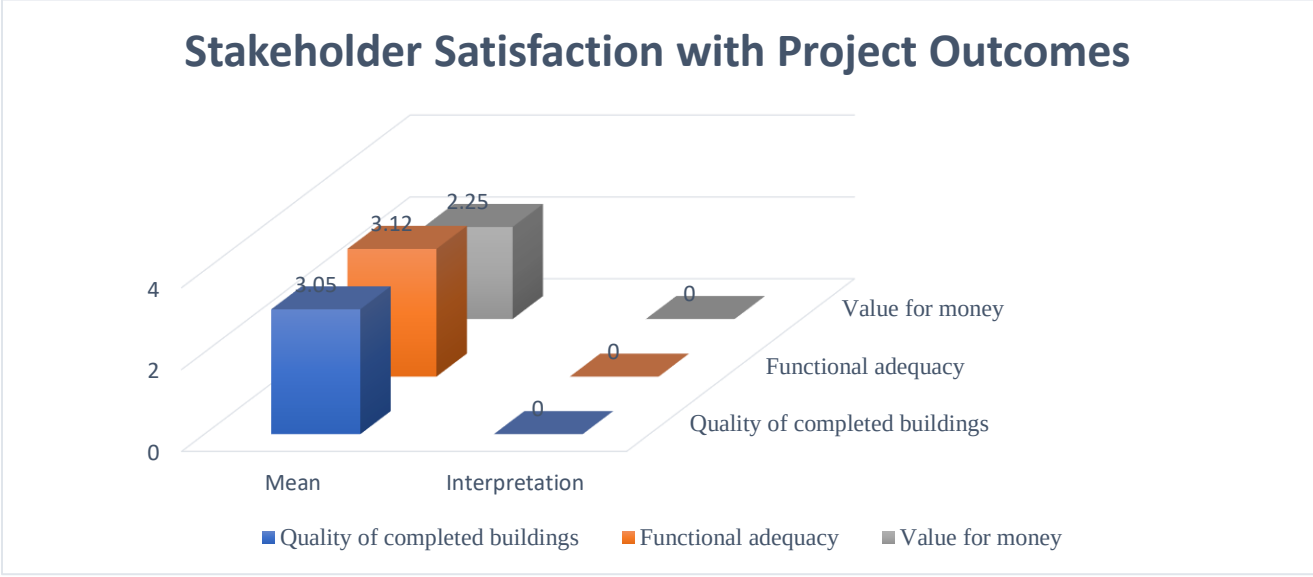


Figure 4.10: Stakeholder Satisfaction with Project Outcomes

4.7 Relationship Between Project Performance and Stakeholder Satisfaction

The analysis demonstrates that project performance is a significant driver of stakeholder satisfaction. When projects are completed on schedule, within budget, and to the required quality standards, stakeholders—including clients, contractors, and the local community—report significantly higher levels of approval.

Table 4.2: Correlation Between Performance and Satisfaction

Performance Variable	*Correlation Coefficient (r)*	*Significance (p)*
Time performance	0.68	< 0.05
Cost performance	0.72	< 0.05
Quality performance	0.84	< 0.05

Interpretation:

The results demonstrate a strong, positive, and statistically significant correlation between all three performance metrics and stakeholder satisfaction. Quality performance shows the highest correlation (r = 0.84), suggesting that the adherence to technical standards and the final build quality are the most critical drivers of satisfaction among community members and end-users in Adola Woyu Town. The significant positive values indicate that as project performance improves in terms of schedule adherence, budget control, and quality, stakeholder satisfaction increases proportionally.

4.8 Qualitative Findings and Triangulation of Results

The qualitative findings were generated from key informant interviews, focus group discussions (FGDs), document reviews, and field observations to complement the quantitative survey results. In line with the mixed-methods research design adopted in this study, the qualitative evidence was used to explain the reasons behind the quantitative findings and to enhance the credibility of the results through methodological triangulation.

Theme 1: Institutional Challenges Affecting Project Performance

Interview participants consistently identified bureaucratic approval procedures as one of the major causes of project delays. Project managers and contractors explained that obtaining approvals for design modifications, payment certificates, and procurement requests often required lengthy administrative procedures, resulting in interruptions to construction activities. Participants in the focus group discussion further noted that weak coordination among public institutions delayed decision-making and

reduced the efficiency of project implementation. These qualitative findings strongly support the quantitative survey results, where bureaucratic approval delays received the highest mean score (Mean = 4.35) among institutional factors, indicating that respondents considered it the most significant institutional challenge affecting project performance.

Document review also revealed repeated schedule extensions caused by delayed administrative approvals and procurement processes. Field observations confirmed that several construction sites experienced temporary work stoppages while awaiting official decisions. The consistency of findings obtained from questionnaires, interviews, FGDs, observations, and document reviews demonstrates that institutional inefficiencies significantly contribute to poor project performance in Adola Woyu Town.

Theme 2: Resource-Related Challenges

The interviews revealed that continuous increases in construction material prices have become a major concern for contractors and project owners. Respondents explained that fluctuations in the prices of cement, reinforcement bars, and finishing materials frequently exceeded the original contract estimates, forcing contractors to reduce work progress while requesting contract adjustments. Focus group participants also emphasized that shortages of skilled labor reduced productivity and affected workmanship, particularly during critical construction activities.

These qualitative findings support the quantitative results, where construction material price escalation obtained the highest mean score (Mean = 4.42) among all resource-related factors, followed by shortages of skilled labor and site constraints. Site observations similarly revealed delayed material deliveries and limited availability of skilled workers at several project locations. The convergence of qualitative and quantitative evidence confirms that resource constraints substantially affect project cost, schedule, and quality performance.

Theme 3: Managerial Challenges

Interview participants indicated that inadequate project planning, insufficient site supervision, and frequent design modifications were common managerial problems affecting project implementation. Several respondents explained that project schedules were prepared during the planning stage but were not effectively monitored during implementation. Consultants also reported that limited supervision and delayed corrective actions contributed to quality deficiencies and schedule slippages.

These findings correspond with the survey results, which identified inadequate project planning as the highest-ranked managerial factor affecting project performance, followed by weak site supervision and design changes during construction. Field observations further confirmed that some projects lacked regular progress monitoring and quality inspections. Therefore, both qualitative and quantitative

findings consistently demonstrate that effective project management practices are essential for improving construction performance.

Theme 4: Stakeholder Satisfaction

Interviewees agreed that project beneficiaries generally appreciated completed public facilities but expressed dissatisfaction with prolonged construction periods, increased project costs, and occasional quality defects. Community representatives participating in the FGDs stated that delayed completion of schools, health centers, and administrative buildings reduced public confidence in government construction projects.

These views are consistent with the quantitative analysis, which revealed a strong positive relationship between project performance and stakeholder satisfaction. As project performance improves in terms of time, cost, and quality, stakeholder satisfaction correspondingly increases. The triangulation of qualitative and quantitative findings therefore confirms that improving construction performance is essential for enhancing public confidence and maximizing the benefits of public infrastructure investments.

Overall, the qualitative findings strongly reinforce the quantitative results. The integration of interviews, focus group discussions, document reviews, and field observations provides a comprehensive understanding of the institutional, resource-related, and managerial factors influencing the performance of public building construction projects in Adola Woyu Town. This methodological triangulation strengthens the credibility, dependability, and validity of the study findings.

4.9 Discussion of Results

The findings of this study demonstrate that the performance of public building construction projects in Adola Woyu Town remains constrained by institutional, resource-related, and managerial challenges. The quantitative findings, supported by qualitative evidence obtained through interviews, focus group discussions, document reviews, and field observations, indicate that these factors collectively contribute to schedule delays, cost overruns, moderate quality performance, and reduced stakeholder satisfaction.

The study found that institutional factors represent one of the most significant determinants of project performance. Bureaucratic approval delays emerged as the highest-ranked institutional challenge, indicating that lengthy administrative procedures negatively affect project implementation. Interview participants confirmed that delays in approving procurement requests, payment certificates, and design revisions frequently interrupted project activities and prolonged completion periods. These findings are consistent with the work of Temesgen et al. (2021), who reported that bureaucratic inefficiencies significantly contributed to delays in Ethiopian public construction projects. Similarly, Ofori (2015)

argued that weak institutional capacity and ineffective regulatory systems remain major barriers to construction performance in developing countries.

Resource-related factors were also found to have a substantial influence on project performance. Construction material price escalation received the highest overall mean score among all resource-related variables, indicating that respondents considered it the most critical challenge affecting project implementation. Qualitative evidence revealed that continuous increases in material prices frequently exceeded contract estimates, resulting in budget overruns, procurement delays, and reduced contractor productivity. These findings support previous studies by Flyvbjerg (2014), who emphasized that inadequate cost forecasting and changing market conditions frequently contribute to cost overruns in construction projects. Likewise, Ofori (2015) observed that shortages of construction resources and unstable supply chains continue to undermine project performance in many developing countries.

The study further established that managerial factors significantly influence project performance. Inadequate project planning, weak site supervision, and frequent design changes were identified as major managerial challenges. Interview participants explained that insufficient monitoring and poor coordination among project participants often resulted in delayed corrective actions and compromised construction quality. These findings agree with the Project Management Institute (PMI, 2021), which emphasizes that effective planning, monitoring, communication, and supervision are fundamental requirements for successful project delivery. Similarly, Kerzner (2017) noted that poor planning and ineffective project control frequently result in delays, increased costs, and reduced project quality.

Another important finding concerns stakeholder satisfaction. The quantitative analysis demonstrated a strong positive relationship between project performance and stakeholder satisfaction, while interviews and focus group discussions revealed that stakeholders were generally satisfied with completed facilities but remained dissatisfied with prolonged project durations, cost overruns, and quality deficiencies. These findings support Stakeholder Theory (Freeman, 1984), which argues that project success should be evaluated not only through traditional performance indicators but also through the satisfaction of stakeholders. Turner and Zolin (2012) similarly concluded that stakeholder satisfaction is a critical dimension of project success because it reflects the extent to which project outcomes meet stakeholder expectations.

The triangulation of quantitative and qualitative findings strengthens the credibility of the study. The consistency observed across questionnaire responses, interviews, focus group discussions, document reviews, and field observations confirms that institutional inefficiencies, resource constraints, and managerial weaknesses are the principal factors affecting the performance of public building construction projects in Adola Woyu Town. This convergence of evidence increases confidence in the

validity of the findings and demonstrates the value of employing a mixed-methods approach to investigate complex construction management problems.

Overall, the findings indicate that improving public building construction performance requires integrated interventions focusing on institutional reform, effective procurement and approval systems, stabilization of construction material supply, enhanced workforce capacity, improved project planning, and stronger site supervision. Addressing these challenges will improve project delivery in terms of time, cost, quality, and stakeholder satisfaction while contributing to more efficient utilization of public resources and sustainable infrastructure development in Adola Woyu Town.

CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the conclusions and recommendations derived from the findings of the study on the performance assessment of public building construction projects in Adola Woyu Town. The conclusions are drawn directly from the empirical results presented in Chapter Four and are structured according to the research questions. Based on these conclusions, practical and policy-oriented recommendations are proposed to improve the performance of public building construction projects. The chapter also highlights the implications of the study, identifies its limitations, and suggests directions for future research.

5.2 Summary of the Study

The study was conducted to assess the performance of public building construction projects with respect to time, cost, and quality, and to identify the key factors affecting project performance and stakeholder satisfaction. A mixed research approach was adopted, combining quantitative data collected through structured questionnaires with qualitative data obtained from key informant interviews, document reviews, and site observations.

Data were analyzed using descriptive and inferential statistical techniques with the aid of SPSS, as outlined in Chapter Three. The study focused on public building construction projects implemented between 2018 and 2023 in Adola Woyu Town and involved major project stakeholders, including public sector officials, contractors, consultants, regulatory authorities, and end-users.

5.3 Major Findings of the Study

5.3.1 Findings Related to Time Performance

The study found that public building construction projects in Adola Woyu Town are characterized by significant schedule delays. Most projects were not completed within the original contract duration, and extensions of time were common. Delays were largely attributed to bureaucratic approval processes, delayed payments, material supply challenges, and inadequate project planning. The findings indicate weak schedule control and limited effectiveness of time management practices.

5.3.2 Findings Related to Cost Performance

Cost performance was found to be unsatisfactory, with frequent cost overruns observed across most projects. The study revealed that many projects exceeded their approved budgets due to material price

escalation, design changes during construction, and delayed payments to contractors. Poor financial management and weak cost monitoring mechanisms further exacerbated cost-related challenges.

5.3.3 Findings Related to Quality Performance

The results showed moderate compliance with technical specifications; however, defects and rework were commonly reported. Inadequate supervision, weak enforcement of quality standards, and limited capacity of supervising personnel contributed to quality deficiencies. While some projects met minimum quality requirements, the overall quality performance was below acceptable standards for public infrastructure projects.

5.3.4 Findings Related to Factors Affecting Project Performance

The study identified institutional, resource-related, and managerial factors as the major determinants of project performance. Institutional factors, particularly bureaucratic delays and weak regulatory enforcement, were ranked as the most critical. Resource-related factors such as material scarcity, price fluctuations, and skilled labor shortages also significantly affected performance. Managerial factors, including inadequate planning, weak supervision, and frequent design changes, further undermined project outcomes.

5.3.5 Findings Related to Stakeholder Satisfaction

Stakeholder satisfaction with both the project implementation process and project outcomes was generally low. Respondents expressed dissatisfaction with communication, transparency, and stakeholder engagement practices. The study also established a statistically significant positive relationship between project performance (time, cost, and quality) and stakeholder satisfaction, indicating that improvements in performance directly enhance stakeholder confidence and acceptance.

5.4 Conclusions of the Study

Based on the findings, it is concluded that public building construction projects in Adola Woyu Town are performing below acceptable standards in terms of time, cost, and quality. Schedule delays and cost overruns are systemic, while quality management practices are insufficient to ensure compliance with technical specifications.

Institutional inefficiencies, particularly bureaucratic processes and weak regulatory enforcement, are the most influential factors affecting project performance. Resource constraints and managerial weaknesses further compound these challenges. Low levels of stakeholder satisfaction reflect the cumulative impact of poor project performance and inadequate stakeholder engagement practices.

Overall, the study concludes that improving public building project performance requires an integrated approach that addresses institutional reforms, strengthens project management capacity, ensures financial discipline, and enhances stakeholder involvement.

5.5 Recommendations

Based on the findings of this study, the following recommendations are proposed to improve the performance of public building construction projects in Adola Woyu Town. Each recommendation is linked directly to the specific problem identified under the research objectives and indicates the responsible stakeholder and implementation mechanism.

5.5.1 Improving Time Performance of Public Building Projects

Problem identified: The study found that many public building projects experienced schedule delays due to bureaucratic approval procedures, delayed payments, and weak coordination among project participants.

Responsible stakeholder: Adola Woyu Town Administration, project owners, procurement offices, and consulting engineers.

Implementation mechanism:

- Establish a fast-track approval system for payment certificates, variation orders, and design revisions.
- Introduce monthly coordination meetings involving contractors, consultants, and municipal officials to resolve pending decisions.
- Use digital progress-tracking and approval systems to reduce administrative waiting time.
- Link contractor payment processing to clearly defined timelines and accountability procedures.

Expected outcome: Faster decision-making, reduced work stoppages, improved schedule adherence, and timely completion of public building projects.

5.5.2 Improving Cost Performance

Problem identified: Construction material price escalation and delayed procurement were identified as major causes of cost overruns.

Responsible stakeholder: Adola Woyu procurement office, regional construction authorities, contractors, and suppliers.

Implementation mechanism:

- Prepare realistic cost estimates that include contingency allowances for inflation and market fluctuations.
- Develop framework agreements with approved suppliers for key materials such as cement, steel, and finishing products.

- Conduct quarterly market price reviews before major procurement decisions.
- Encourage the use of locally available construction materials where technically appropriate.

Expected outcome: Better budget control, reduced procurement delays, and lower exposure to sudden material price increases.

5.5.3 Improving Quality Performance

Problem identified: Moderate quality performance was associated with inadequate site supervision, inconsistent quality inspections, and shortages of skilled labor.

Responsible stakeholder: Consulting engineers, contractors, and the Ethiopian Construction Works Regulatory Authority.

Implementation mechanism:

- Assign full-time qualified site supervisors to all public building projects.
- Conduct regular quality audits and material testing in accordance with ECA/ECWRA standards.
- Provide short-term technical training for masons, carpenters, and site technicians.
- Require contractors to maintain documented QA/QC procedures throughout project execution.

Expected outcome: Improved workmanship, fewer defects and rework activities, and higher compliance with national construction quality standards.

5.5.4 Addressing Institutional and Regulatory Challenges

Problem identified: Bureaucratic approval delays and weak enforcement of construction regulations were identified as the most influential institutional factors affecting project performance.

Responsible stakeholder: Adola Woyu Town Administration, regional construction bureau, and regulatory authorities.

Implementation mechanism:

- Develop standard operating procedures (SOPs) with maximum processing times for permits, approvals, and payments.
- Establish a project monitoring committee responsible for tracking compliance with procurement, quality, and reporting requirements.
- Implement performance-based accountability measures for officials responsible for project approvals.
- Provide regular regulatory compliance training for municipal staff and project managers.

Expected outcome: Stronger institutional efficiency, improved regulatory compliance, and reduced administrative delays during project implementation.

5.5.5 Addressing Resource-Related Challenges

Problem identified: Shortages of skilled labor and difficult site and terrain conditions negatively affected productivity and project progress.

Responsible stakeholder: Contractors, technical and vocational training institutions, and regional labor offices.

Implementation mechanism:

- Create project-specific labor development programs in collaboration with local TVET institutions.
- Maintain a database of certified skilled workers for public projects in the town.
- Conduct detailed site investigations before project commencement to identify terrain and logistics challenges.
- Prepare logistics and access plans for projects located in difficult terrain.

Expected outcome: Increased labor productivity, fewer interruptions caused by workforce shortages, and better management of terrain-related construction challenges.

5.5.6 Strengthening Project Management Practices

Problem identified: Inadequate project planning, weak site supervision, and frequent design changes during construction reduced overall project performance.

Responsible stakeholder: Project owners, consultants, and contractors.

Implementation mechanism:

- Require comprehensive project schedules with measurable milestones before contract award.
- Use weekly site progress reviews to monitor schedule, cost, and quality performance.
- Complete design reviews and technical approvals before construction begins to minimize scope changes.
- Apply earned value and progress monitoring techniques for ongoing project control.

Expected outcome: Improved planning accuracy, stronger supervision, reduced design-related disruptions, and better overall project control.

5.5.7 Enhancing Stakeholder Satisfaction

Problem identified: Stakeholders expressed dissatisfaction with prolonged project duration, limited communication, and inadequate community engagement during implementation.

Responsible stakeholder: Project owners, municipal authorities, contractors, and community representatives.

Implementation mechanism:

- Establish community consultation meetings at the start, midpoint, and completion of each project.
- Provide public progress updates through notice boards, local meetings, and municipal communication channels.

- Introduce a grievance-handling mechanism that allows community members to report concerns and receive timely responses.
- Include end-user representatives in final project inspection and handover processes.

Expected outcome: Greater transparency, improved public trust, higher stakeholder satisfaction, and stronger community ownership of completed facilities.

Overall Recommendation

The findings indicate that improving public building construction performance in Adola Woyu Town requires coordinated action among government institutions, contractors, consultants, regulatory bodies, training institutions, and local communities. Priority should be given to reducing bureaucratic delays, stabilizing material supply, strengthening supervision, developing skilled labor, and improving stakeholder engagement. Implementing these recommendations will contribute to better schedule performance, stronger cost control, improved quality compliance, and higher stakeholder satisfaction in future public building projects.

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7. APPENDIX

Questioner



FEDERAL TVET INSTITUTE
FACULTY OF CIVIL DIVISION TECHNOLOGY
DEPARTMENT OF CONSTRUCTION TECHNOLOGY AND MANAGEMENT

TITLE: PERFORMANCE ASSESSMENT IN PUBLIC BUILDING CONSTRUCTION PROJECTS

(THE CASE OF ADOLA WOYU TOWN)

A THESIS PROPOSAL SUBMITTED TO GRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER'S SCIENCE IN CONSTRUCTION MANAGEMENT

Dear sir/madam

This thesis research is intended to evaluate the performance of public building construction projects in Adola Woyu Town (2018-2023). The study aims to assess project adherence to time, cost, and quality standards; identify and analyze the institutional, resource-related, and managerial factors contributing to performance issues; and evaluate stakeholder satisfaction with project outcomes. The findings will be used to propose context-specific strategies to improve project delivery. This paper could not achieve its meant purpose without the involvement of the relevant stakeholders. Your experience and perspective as a professional involved in these projects are invaluable. Thanking you in advance for sharing your valuable time, despite your busy schedule, I am kindly requesting your priceless feedback.

Ethical Consideration: Your participation is entirely voluntary. All responses will be kept strictly confidential, and the data will be used only for the purpose of this academic research. Your name or organization will not be identified in the final report. If you have any question, free to contact me [0916804430]

By: Nuredin Negash

Advisor: Mekonnen Abebe (PhD)

Thank you for your valuable time and contribution.

Part 1: Respondent's Profile (Demographics)

This section collects background information to help categorize the responses, as specified in the research methodology.

1. Which of the following best describes your primary role in public building projects in Adola Woyu Town? (Please select one)

- □ Municipal Official (Client/Project Owner)
- □Contractor / Subcontractor
- □Consultant (Architect, Engineer, QA/QC)
- □Regulator (e.g., from ECA or regional bureau)
- □End-User (e.g., school administrator, healthcare staff, community leader)
- □Other (Please specify): _____

2. What is your organizational affiliation?

- □Public/Government Sector
- □Private Contractor Firm
- □Private Consultant Firm
- □End-User Institution (e.g., School, Clinic)
- □Other (Please specify): _____

3. How many years of experience do you have in the construction sector?

- □ 0 – 5 years
- □6 – 10 years
- □11 – 15 years
- □16 – 20 years
- □Over 20 years

PART 2: Performance Assessment (2018–2023)

Please rate your level of **agreement** with the following statements based on your general experience with public building projects in Adola Woyu Town.

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

A. Time (Schedule) Performance	**1**	**2**	**3**	**4**	**5**
1. Projects are consistently completed by the original deadline.					
2. Schedule variance (delays) is a major issue in this town.					
3. Extensions of time are properly justified and documented.					

B. Cost (Budget) Performance	1	2	3	4	5
4. Projects are completed within the original contract budget.					
5. Cost overruns (variance) frequently exceed the planned contingency.					
6. Payments to contractors are released on time.					

C. Quality Performance	1	2	3	4	5
7. Completed buildings meet the technical specifications (ECA standards).					
8. Defects or need for rework are common during construction.					
9. Quality control inspections are conducted frequently and effectively.					

Part 3: Factors Affecting Project Performance

Please rate the **significance** of the following factors in causing poor project performance in Adola Woyu Town.

(Scale: 1 = Not Significant, 2 = Slightly Significant, 3 = Moderately Significant, 4 = Very Significant, 5 = Extremely Significant)

A. Institutional & Regulatory Factors	1	2	3	4	5
1. Bureaucratic delays in permit/approval processes.					
2. Weak enforcement of building codes by regulatory bodies.					
3. Lack of transparency in the tendering/procurement process.					

B. Resource-Related Factors	1	2	3	4	5
4. Scarcity or price fluctuation of construction materials.					
5. Shortage of skilled labor or technical professionals.					
6. Difficult local terrain or site accessibility (logistics).					
7. Financial constraints (cash flow) of the contractor.					

C. Managerial Factors	1	2	3	4	5

8. Poor project planning and scheduling practices.					
9. Inadequate site supervision and coordination.					
10. Frequent design changes (scope creep) during execution.					

Part 4: Stakeholder Satisfaction

Please rate your level of **satisfaction** with the following aspects of public building projects in Adola Woyu Town.

(Scale: 1 = Very Dissatisfied, 2 = Dissatisfied, 3 = Neutral, 4 = Satisfied, 5 = Very Satisfied)

	Aspect of Satisfaction	**1**	**2**	**3**	**4**	**5**
A. Satisfaction with Project Process						
4.1	The level of communication and information sharing.					
4.2	The transparency of project management and decision-making.					
4.3	The way conflicts and disputes were resolved.					
4.4	The level of engagement with the local community/end-users.					
B. Satisfaction with Project Outcomes						
4.5	The overall quality of the *final, completed* building.					
4.6	The functionality and usefulness of the facility for its intended purpose.					
4.7	The overall value for money achieved by the project.					
4.8	**Overall, how satisfied are you** with the performance of public building projects in Adola Woyu Town?					

Part 5: Recommendations (Open-Ended)

5.1. In your opinion, what is the single most critical challenge that causes public building projects in Adola Woyu Town to fail in terms of time, cost, or quality?

_____

_____

_____

5.2. What is one specific, practical recommendation you would suggest to improve the performance of these projects in the future?

_____
_____
_____

Part 6 : SEMI-STRUCTURED INTERVIEW GUIDE

(Target: Project Managers, Site Engineers, Contractors - Purposive Sampling)

Part A: Project Context

1. Can you describe a recent public building project in Adola Woyu you were involved in? What were the main challenges?

Part B: Root Causes (Explaining the Data)

2. Time: Our survey data suggests frequent delays. In your experience, is this due more to contractor capacity, or external factors like terrain and permits?

3. Cost: How do material price fluctuations in this specific region (Adola Woyu) impact your ability to stay within budget?

4. Quality: How strictly are ECA quality standards enforced on-site? Are there gaps in supervision?

Part C: Institutional & Resource Issues

5. How does the local topography/terrain of Adola Woyu specifically affect logistics and project timelines?

6. Do you feel the current procurement process selects competent contractors? Why or why not?

Part D: Recommendations

7. What specific policy change would most improve construction performance in this town?

Part 7 : OBSERVATION CHECKLIST

(To be used by the researcher during site visits)

Project Name: _____ Date: _____

Category	Observation Item	Status (Yes/No/Partial)	Remarks/Notes
Safety (HSE)	Workers using PPE (helmets, boots, vests)?		
	Safety signage displayed on site?		
Resources	Materials stored properly (protected from weather)?		
	Necessary equipment present and functional?		
Quality	Evidence of concrete testing (slump test/cubes)?		
	Workmanship quality (visual inspection of finishing)?		
Workflow	Active work in progress (not stalled)?		
	Site diary/logbook available and updated?		

Part 8: DOCUMENT REVIEW PROTOCOL

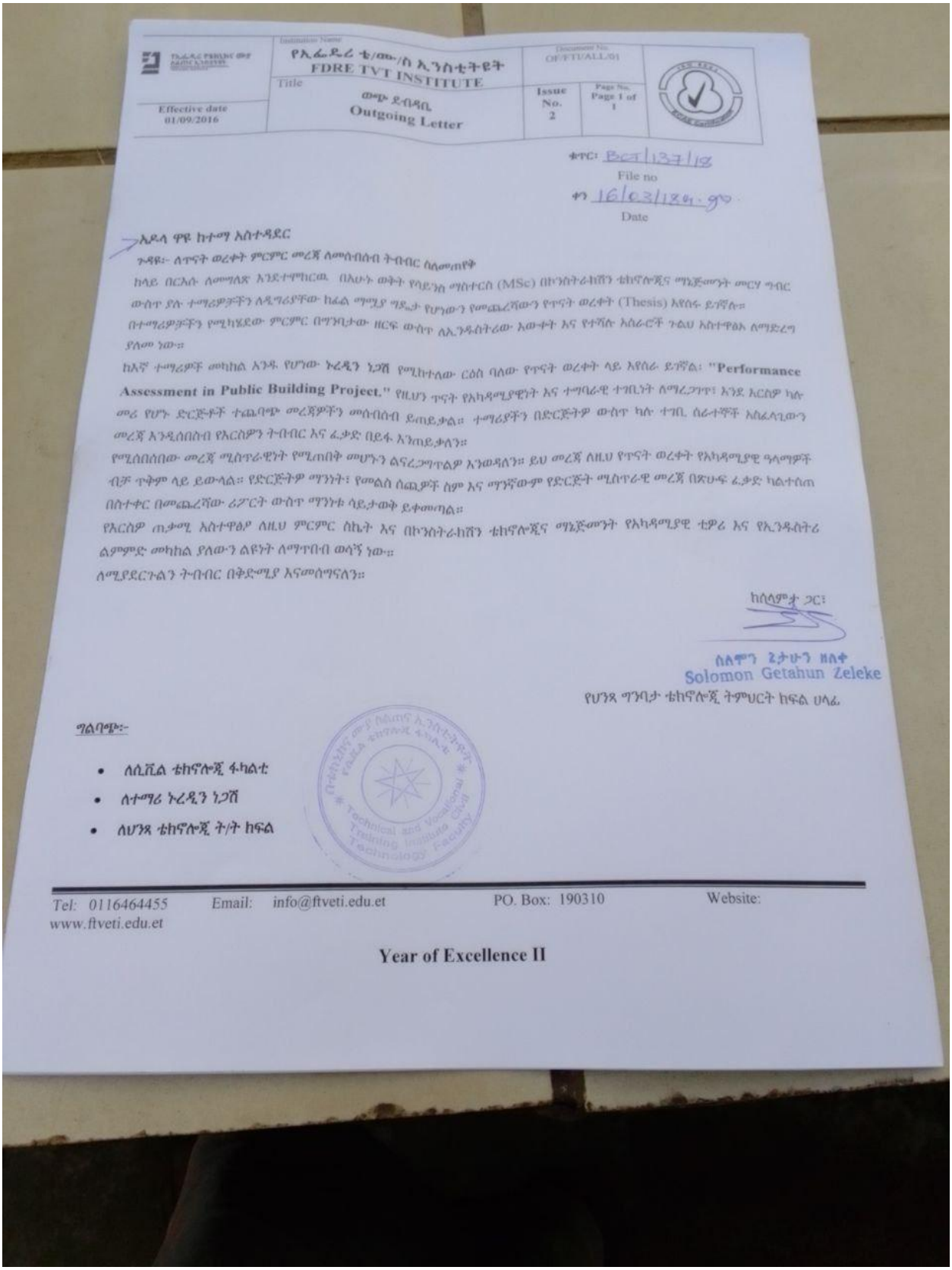
(For extracting Secondary Data)

Data Extraction Form:

1. **Project Name: _____**
2. **Planned Start Date: _____ Actual Start Date: _____**
3. **Planned Finish Date: _____ Actual Finish Date: _____**
    - *Calculated Schedule Variance:* _____ months/days
4. **Contract Amount (ETB): _____**
5. **Final/Current Cost (ETB): _____**
    - *Calculated Cost Variance:* _____ ETB
6. **Number of Quality Non-Conformance Reports (NCRs): _____**
7. **Change Orders issued: _____** (Number)

Thank you for your participation!

Latter



የፌዴራል ቴ/ሙ/ስ ኢንስቲትዩት FDRE TVT INSTITUTE	Document No. OF/FTI/ALL/01	
Title ውጭ ደብዳቤ Outgoing Letter	Issue No. 2	Page No. Page 1 of 1
Effective date 01/09/2016		

ቁጥር፡ BCT/137/18
File no
ቀን 16/03/2018.90
Date

አዶላ ዋዩ ከተማ አስተዳደር

ጉዳዩ፡- ለጥናት ወረቀት ምርምር መረጃ ለመሰብሰብ ትብብር ስለመጠየቅ

ከላይ በርእሱ ለመግለጽ እንደተሞከርዉ በአሁኑ ወቅት የሳይንስ ማስተርስ (MSc) በኮንስትራክሽን ቴክኖሎጂና ማኔጅመንት መርሃ ግብር ውስጥ ያሉ ተማሪዎቻችን ለዲግሪያቸው ከፊል ማሟያ ግዴታ የሆነውን የመጨረሻውን የጥናት ወረቀት (Thesis) እየሰሩ ይገኛሉ።

በተማሪዎቻችን የሚካሄደው ምርምር በማንካታው ዘርፍ ውስጥ ለኢንዱስትሪው እውቀት እና የተሻሉ አሰራሮች ጉልህ አስተዋጸኦ ለማድረግ ያለመ ነው።

ከእኛ ተማሪዎች መካከል አንዱ የሆነው ኑረዲን ነጋሽ የሚከተለው ርዕስ ባለው የጥናት ወረቀት ላይ እየሰራ ይገኛል፡ "**Performance Assessment in Public Building Project.**" የዚህን ጥናት የአካዳሚያዊነት እና ተግባራዊ ተገቢነት ለማረጋገጥ፣ እንደ እርስዎ ካሉ መሪ የሆኑ ድርጅቶች ተጨባጭ መረጃዎችን መሰብሰብ ይጠይቃል። ተማሪያችን በድርጅትዎ ውስጥ ካሉ ተገቢ ሰራተኞች አስፈላጊውን መረጃ እንዲሰበስብ የእርስዎን ትብብር እና ፈቃድ በይፋ እንጠይቃለን።

የሚሰበሰበው መረጃ ሚስጥራዊነት የሚጠበቅ መሆኑን ልናረጋግጥልዎ እንወዳለን። ይህ መረጃ ለዚህ የጥናት ወረቀት የአካዳሚያዊ ዓላማዎች ብቻ ጥቅም ላይ ይውላል። የድርጅትዎ ማንነት፣ የመልስ ሰጪዎች ስም እና ማንኛውም የድርጅት ሚስጥራዊ መረጃ በጽሁፍ ፈቃድ ካልተሰጠ በስተቀር በመጨረሻው ሪፖርት ውስጥ ማንነቱ ሳይታወቅ ይቀመጣል።

የእርስዎ ጠቃሚ አስተዋፅዖ ለዚህ ምርምር ስኬት እና በኮንስትራክሽን ቴክኖሎጂና ማኔጅመንት የአካዳሚያዊ ቲዎሪ እና የኢንዱስትሪ ልምምድ መካከል ያለውን ልዩነት ለማጥበብ ወሳኝ ነው።

ለሚያደርጉልን ትብብር በቅድሚያ እናመሰግናለን።

ከሰላምታ ጋር፣

ሰለሞን ጌታሁን ዘለቀ
Solomon Getahun Zeleke
የህንጻ ግንባታ ቴክኖሎጂ ትምህርት ክፍል ሀላፊ

ግልባጭ፡-

- ለሲቪል ቴክኖሎጂ ፋካልቲ
- ለተማሪ ኑረዲን ነጋሽ
- ለህንጻ ቴክኖሎጂ ት/ት ክፍል

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