



JIMMA UNIVERSITY
JIMMA INSTITUTE OF TECHNOLOGY
SCHOOL OF GRADUATE STUDIES
FACULTY OF CIVIL AND ENVIRONMENTAL ENGINEERING
CONSTRUCTION ENGINEERING AND MANAGEMENT CHAIR

**ASSESSMENT OF THE ADDIS ABABA HOUSING DEVELOPMENT
CORPORATION PERFORMANCE: THE CASE OF BOLE AYAT SITE
HOUSING DEVELOPMENT BRANCH OFFICE**

A Thesis Submitted To School Of Graduate Studies, Jimma University, Jimma Institute Of Technology, Faculty Of Civil And Environmental Engineering In Partial Fulfillment Of The Requirements For Degree Master Of Science In Construction Engineering And Management

By
MEKDES GEBRU TESFAEZEGI

August 2024
Jimma, Ethiopia

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Advisor: Dr. Lucy Feleke (PhD) Signature _____ Date _____

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August 2024
Jimma, Ethiopia

DECLARATION

I Declare That This Research Entitled “Assessment of the Addis Ababa Housing Development Corporation Performance: The Case of Bole Ayat Site Housing Development Branch Office” is my original work and has been submitted as a requirement for the award of any degree in Jimma University.

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As research Advisor, I hereby certify that I have read and evaluated this thesis paper prepared under my guidance Mekdes Gebru Tesfazezi, entitled "Assessment of the Addis Ababa Housing Development Corporation Performance: The Case of Bole Ayat Site Housing Development Branch Office " and I recommend and would be accepted as fulfilling the requirements for the degree of Master of Science in Construction Engineering and Management.

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ABSTRACT

The growing population in Addis Ababa has spurred a heightened demand for housing, prompting the Addis Ababa Housing Development Corporation to play a pivotal role in addressing the housing requirements of the city's expanding populace. Constructing affordable housing projects posed significant challenges for project managers, influenced by various critical factors. This study aimed to evaluate the existing practices and obstacles encountered by the Addis Ababa Housing Development Corporation, with a specific focus on the Bole Ayat site 4-branch office.

Employing descriptive and explanatory research methods involving literature review and survey analysis, the study identified delays in project completion, construction quality, affordability, accessibility issues, and lack of transparency as primary impediments or challenges faced by the project.

Affordability and accessibility emerged as the most pressing challenges, closely followed by construction quality issues. Additionally the study identified in the project weak project planning and scheduling, inadequate technology integration, a shortage of skilled labor, poor resource management, and ineffective communication. The study also highlighted that contractors were most influential parties in project outcomes, with the Addis Ababa Housing Development Corporation, project managers, suppliers, and stakeholders also significantly contributing to project success.

Furthermore, the study recommended the importance of enhanced planning and scheduling, integration of technology, and resource management to drive successful project outcomes in the future. Stakeholder collaboration, clear communication channels, role delineation, and quality control and monitoring surfaced as crucial tools vital for achieving project success in forthcoming endeavors.

Key words: Quality of Construction, Affordability, Delays, Management, Performance

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ACRONYMS

AAHDC	Addis Ababa Housing Development Corporation
AAHDP	Addis Ababa Housing Development Program
CSA	Central Statics Agency
IHDP	Integrated Housing Development Program
IPMA	International Project Management Association
LCH	Low Cost Housing
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
SME	Small and Midsize Enterprises
SPSS	Statistical Package for the Social Sciences
UN	United Nations

CHAPTER ONE

INTRODUCTION

1.1. Background

The population of AA City, the capital of Africa, is growing with time. According to the CSA (2015), AA has 3.3 million people and now in 2024 the population of Addis Ababa 5 million. Based on this number, AA's population symbolizes 3.6% of the country's total inhabitants and 18% of Ethiopia's urban population. Its population has grown at a pace of 2.1% each year. With this increased urban population, housing demand increased from day to day in the city. Since the founding of AA as the principal of Ethiopia, the flow of inner movement from rural to urban areas, particularly to AA, has increased (Charitonidou, 2021). The AA Housing Development Corporation (AAHDC) plays a crucial role in addressing the housing needs of the rapidly growing population in Addis Ababa, the capital city of Ethiopia. As urbanization continues to accelerate, the demand for affordable housing in the city has been on the rise, leading to significant challenges in the housing sector.

According to numerous scholars, there is a lack of comprehensive housing data in AA. The city's revised master plan in the early 2000s acknowledged a significant shortage of housing units, especially for low-income individuals, and noted the generally poor condition of existing housing stock Delz (2016). In 2000, the city already had a backlog of 233,000 housing units and it estimated that an additional 223,000 units needed by 2010. According to the 2007 census, AA's housing stock was 628,986 units (Gezahegn, et al., 2022; Gezahegn et al., 2017; Tadesse et al., 2023). This study showed the demand for housing even from Delz (2016) report projection high. More than 75% of this stock built of mud and wood, and half of it was over 20 years old.

Regarding services, nearly all homes (98%) have access to running water, although only 32% have private connections. Furthermore, 15% of homes lack toilets, and 62% share communal toilets. Shockingly, more than 80% of households do not have a bathroom, and approximately 20% lack a kitchen (Charitonidou, 2021). The average increase housing availability between 1994 and 2004 was meager 2.3%, which falls of the average annual growth rate of 3% during the same period (Bihon, 2006). This disparity implies that around 65.7% of households were impacted by the housing shortage, resulting in over a quarter of all households living in overcrowded conditions.

So that, the government introduced a new approach to housing development. Because housing was identified as the most essential basic need after food and water (Wube, 2008). The housing deficit was approximately 350,000, with 70% of the population living in unhealthy slums. In 2005, the AA city administration initiated a large-scale housing project aimed at alleviating urban poverty and improving living conditions for low and middle-income individuals (Charitonidou, 2021). This project, known as the Integrated Housing Development Program (IHDP), aimed to assist low-income households in purchasing homes. Under this program, successful applicants would only be responsible for paying for the construction of their units, while the government would provide the land. The city government proposed 2 housing projects, named 20/80 and 40/60, totaling 139,008 housing units, according to the IHDP report of 2022. The bureau report, indicated that the new 10 years strategy plan prepared to construct 2,000,000 (two million) housing units. The report proposal indicated that government would construct 400,000 housing units and 1,600,000 housing units constructed by private housing development sectors.

Among them, in the first 5 years, government will construct 200,000 housing units and 800,000 will be by private sectors. However, the office has reported to construct rather in 2021/22 year, only 342,393 housing units were constructed. Among them 112,325 housing units by government and 230,068 by private sectors. According to IHDP, report (2020) housing units transferred from 2004 to 2020 were only 241,648 through lottery system to special needs, teachers, low salary groups, internal displaced groups, cabinets and least low income groups. As the report of IHDP (2022), house constructed during the date were too minimal according to its schedule and strategic plan.

In 2013, a re-registration process conducted by the city administration to verify genuine applicants for the condominium house. Among the applicants, 22324, 758168, and 164687 individuals were registered under the 10/90, 20/80, and 40/60 schemes respectively. Bole Ayat Site Four Project falls under the 40/60 program category and affected by various factors that influence its completion. This study in detail evaluated the factors that contributed to the project's success in terms of performance.

1.2. Statements of the problem

Construction of low cost housing (LCH) projects are very challenging endeavor on the part of the project manager due to various factors. According to Portal (2024), the evaluation and assessment on the relevance of cost efficient/affordable constructions had been become the most relevant aspect in the context of the large volume of housing to be constructed, and the consideration of limitations in the availability of resources such as building materials and finance. It was often touted as a panacea in meeting the ever-growing demand for rapid housing delivery in developing economies. On the other hand, as stated in a book (Heagney, 2012), modern quality management should align with project quality management from various perspectives. For instance, the project should emphasize the significance of project quality by focusing on customer satisfaction, prioritizing prevention over inspection, promoting continuous improvement, and acknowledging management responsibility. Launched in 2005, AAHDC initiated the IHDP, which comprises three typologies of housing standards known as 10/90, 20/80, and 40/60, aimed at addressing the housing shortage in the city. The project has been ongoing for over 19 years since its inception. The program planned and designed with the aim of incorporating cost-effective construction techniques as a strategic policy. However, there are debates regarding whether low-cost housing (LCH) projects have effectively addressed cost concerns during implementation. Various scholars have identified different factors that have impeded the project's performance in several ways. For instance they were categorized the cost factor (refers to the financial aspect of the project, like budgeting, cost estimation, cost control, and cost management throughout the project lifecycle). Time factors (scheduling, time management, and meeting project deadlines), quality factors (meeting the specified standards and requirements for the project), risk management factors, stakeholder satisfaction factors and others (Biyena, 2019; Kuhil & Seifu, 2019; Shay, 2019; Tesluk & Jacobs, 1998). Bole Ayat site project four office is one of the 40/60 housing project office and has several limitation according to the project performance. Several issues identified during site observation and document review of the project, including poor construction quality, delays in completion, and cost overruns. These challenges attributed to specific factors within each category. Therefore, this study conducted to assess the performance of the current practice, challenges, and engage a proactive team, and devised future project management strategies and work

methodologies for sustainable development. This achieved through the exploration of three key research inquiries.

1.3. Research Questions

Research questions formulated to establish the direction of the research, set its boundaries, and provide clarification. The research questions considered were as follows:

1. What is the current practice of the Addis Ababa housing construction Ayat site four project?
2. What are the major challenges that affect the performance of the Addis Ababa housing construction Ayat site four project?
3. Who are the parties accountable for the poor performance of the project?

1.4. Objectives

1.4.1. General Objective

The general objective of this study was to assess the current practices and challenges faced by the Addis Ababa Housing Development Corporation, specifically focusing on the Bole Ayat site within Project Four Housing Development Branch Office.

1.4.2. Specific Objectives

The specific objectives of the research were the following:

1. To assess the current practice of the Addis Ababa housing construction Ayat site four project.
2. To determine the major challenges that affect the performance of Addis Ababa housing construction Ayat site four project.
3. To identify the parties accountable for the poor performance of the project.

1.5. Significance of the Study

Successfully managed and implemented qualified projects play a key role in the improvement human safety, contribute to improved productivity, and increase sustainability. Project management in general and quality management in particular, have been at its infant stage of development as a profession especially in Ethiopia. This research also aimed to add to the existing

literature and findings for other similar related projects to improve project performance through successful implementation and management of projects.

For the government: the study aimed to provide valuable insights into the current practices and challenges faced by the Addis Ababa Housing Development Corporation. The findings aimed to help the government in making informed decisions and implementing policies.

For the community: The study's significance for the community lay in its potential to address the challenges faced in housing development, particularly in the Bole Ayat site. By identifying drawbacks and proposing solutions, the study aimed to contribute to the creation of better living conditions for residents, ensuring that housing projects met the needs and expectations of the community.

For the scientific society: This study held significance for the scientific society as it added to the body of knowledge related to housing development practices and challenges. The findings aimed to contribute to academic research and discussions on urban development, housing policies, and project management. Additionally, the study may have inspired further research and analysis in similar contexts, enriching the scientific community's understanding of housing development issues.

1.6. Scope of the Study

The scope of the study was limited to Bole Ayat site four-project branch office of the 40/60 housing program, offered by the Addis Ababa Housing Construction Development Office. The study aimed to investigate and analyze this specific program to gain insights into its performance and impact. These programs had several projects in the city, and the study conducted at the Ayat site four project in Lemi Kura sub-city. The study primarily considered the four major role players: the clients, contractors, Administrator/AAHDC and consultants.

The research addressed project drawbacks, responsive teams and future management aspects based on findings.

1.7. Limitation of the Study

The study faced constraints including time and budget limitations, alongside political intentions affecting the project's progress. Administrative changes and disorganized files further complicated matters. These challenges mitigated through consistent engagement via regular meetings with

project officers and stakeholders. This approach fostered enhanced coordination and problem resolution, contributing to more effective project management practices over time.

CHAPTER TWO

LITERATURE REVIEW

2.1. Project and Project Management

2.1.1. Project

A project defined as a temporary endeavor undertaken to create a unique product, service, or result. Projects are typically characterized by their defined objectives, scope, timeline, and budget, and they require a dedicated team to work together to achieve the desired outcome (Abyad, 2018; Turner, 2009; Turner & Müller, 2003). A project is a task that performed by a temporary organization in order to achieve predetermined result(Turner & Müller, 2003). Projects are not limited in size or in persons involved but are always temporal and have a clear start and end. Projects used for different kinds of purpose, but most commonly, they are used for realizing organizational goals(Turner, 2009). Moreover, one of the most commonly accepted definition of project is that a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by specific time, within budget, and according to specification (Rosenau & Githens, 2011).

According to Nyakala et.al, (2019), parties who are involved in once project are contractors, clients/owners, consultants/design professionals, and regulatory agencies. These parties strong relationship is very important for one project success. For instances, contactors area responsive for contract plans ,specifications, and other documents prepared in sufficient details; timely decision by the owner and design professional; fair and timely interpretation of contract requirements from field design and inspection staff; contract for performance of work on a reasonable schedule.

On the other hands, consultants are responsible for the provision of well-defined scope of work, budget to assemble and use a qualified, trained and experienced staff, budget to obtain adequate filed information prior to design, provision for timely decision by owner and design professional, contract to perform necessary work at a fair fee with adequate time allowance (Nyakala et.al, 2019). Others parties are also responsible for their tasks and what contribution needed from them. Concluding that, the success of a project is heavily dependent on effective project management.

2.1.2. Project Management

Project management is a critical aspect of any organization's operations, as it involves planning, organizing, and overseeing the execution of a specific project. A project manager is a person responsible for overseeing all aspects of the project, including managing resources, communicating with stakeholders, and ensuring that the project completed on time and within budget(Kerzner, 2017). One of the most significant definition given in PMBOK, which defines project management as “the application of knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project”(Guide, 2001)

It is about creating an environment and conditions in which desired objective and goals achieved in a controlled manner by a team of people and accomplished through the application and integration of the project management processes i.e., initiating, planning, executing, monitoring, controlling and closing(Takagi & Varajão, 2020). Project management has become a scientific field with its own professional associations, the Project Management Institute (PMI) and the International Project Management association (IPMA) (Obradović, 2018). These associations are known as promoters of the standardization of project management and certification programs for project managers(Seymour & Hussein, 2014).

Proper management of project as stated in PMOBK includes but not limited to the requirement identification, addressing stakeholders concerns, needs and expectations in planning and implementation of projects, maintain internal and external stakeholders’ management and communication. Moreover, balancing of project competing constraints mainly scope, Quality, schedule, budget, resources and risks which are the most common factors (Stackpole, 2013). To this end there is strong relationship among each factor since there is interdependence to influence each other for example if there is time or cost overrun on the projects it has direct impact on targeted quality(Nader et al., 2013).

The PMBOK guide is process based on describing project management accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing. Further, it assumes that all project management practices fall into ten knowledge areas, which are project integration management, project scope

management, project time management, project cost management, project quality management, project resource management, project communications management, project risk management, project stakeholder management, and project procurement management.

According to Herath & Chong, (2021)review, the key components of project management are essential for the successful completion of a project are:

Project Initiation: This phase involves defining the project objectives, scope, and deliverables. The project manager works with stakeholders to identify the project requirements and establish a clear understanding of what needs to be accomplished.

Project Planning: In this phase, the project manager develops a detailed project plan that outlines the tasks, timeline, and resources required to complete the project. This plan serves as a roadmap for the project team and helps to ensure that everyone is on the same page.

Project Execution: During this phase, the project manager oversees the implementation of the project plan. This involves coordinating the activities of the project team, managing resources, and monitoring progress to ensure that the project stays on track.

Project Monitoring and Control: Throughout the project, the project manager must continuously monitor progress and make adjustments as needed to keep the project on schedule and within budget. This phase involves tracking key performance indicators, identifying potential risks, and taking corrective action to address any issues that arise.

Project Closure: Once the project objectives met and the deliverables completed, the project manager closes out the project. This involves obtaining final approval from stakeholders, documenting lessons learned, and transitioning the project team back to their regular roles.

In generally, the effective project management requires a combination of technical skills, leadership abilities, and communication skills. Project managers must be able to work with diverse teams, manage competing priorities, and adapt to changing circumstances. They must also be able to communicate effectively with stakeholders at all levels of the organization to ensure that everyone aligned on the project goals and objectives.

2.2. Challenges Housing Projects

Housing projects play a crucial role in addressing the global challenge of providing adequate and affordable housing for all (King et al., 2017). These projects aim to create safe, comfortable, and sustainable living spaces for individuals and families, contributing to social stability and economic development. However, despite their noble objectives, housing projects often face numerous challenges and drawbacks that can hinder their success and impact. This review explores some of the key challenges and drawbacks associated with housing projects, and discusses potential strategies to address them. Moreover, this review focused on drawbacks or weaknesses of the housing projects.

2.2.1. Quality of Construction

The quality of building construction is a critical aspect of the construction industry, as it directly affects the safety, durability, and functionality of a building. In recent years, there has been a growing emphasis on improving the quality of building construction, due to the increasing complexity of building designs and the need for sustainable and energy-efficient buildings (Eleftheriadis et al., 2017). This literature review will explore the various factors that contribute to the quality of building construction, including materials, workmanship, design, and project management.

One of the key factors that influence the quality of building construction is the materials used in the construction process. High-quality materials are essential for ensuring the durability and longevity of a building (Hertwich et al., 2019; Hong et al., 2016; Kanters, 2018). Research has shown that using low-quality materials can lead to structural defects, water infiltration, and poor thermal performance, which can compromise the safety and comfort of building occupants (Nur'afini Dzulkifli et al., 2022; Sarbini et al., 2022; Wardach & Krentowski, 2023). Therefore, it is crucial for builders and contractors to carefully select and source materials that meet the required standards and specifications.

In addition to materials, the quality of building construction is also influenced by the level of workmanship and craftsmanship involved in the construction process (Fyhn & Søråa, 2017). Skilled and experienced workers are essential for ensuring that construction activities are carried out efficiently and accurately. Poor workmanship can result in construction defects, such as uneven surfaces, misaligned elements, and inadequate sealing, which can affect the overall quality and

appearance of the building. Therefore, it is important for builders to invest in training and supervision to ensure that workers have the necessary skills and knowledge to perform their tasks effectively.

Furthermore, the design of a building plays a crucial role in determining its quality (Moreno-Rangel et al., 2020). A well-designed building not only meets the functional requirements of its occupants but also enhances the aesthetic appeal and value of the property (Arafat et al., 2024). Research has shown that buildings with thoughtful and innovative designs are more likely to be sustainable, energy-efficient, and resilient to environmental factors (Omole et al., 2024, 2024; Zhong & Li, 2024). Therefore, architects and designers need to consider factors such as building orientation, daylighting, ventilation, and thermal performance when developing building designs to ensure that they meet the highest standards of quality.

Project management is another critical factor that influences the quality of building construction. Effective project management involves planning, coordination, and control of various activities to ensure that the project is completed on time, within budget, and to the required quality standards (Kerzner, 2017). Research has shown that poor project management can lead to delays, cost overruns, and quality issues, which can have serious consequences for the success of a construction project (Durdyev, 2021). Therefore, it is essential for project managers to have the necessary skills and tools to monitor and evaluate project progress, identify potential risks, and implement corrective actions to address any issues that may arise.

In conclusion, the quality of building construction is a multifaceted issue that involves various factors, including materials, workmanship, design, and project management. Improving the quality of building construction requires a holistic approach that involves collaboration between builders, architects, designers, and project managers to ensure that all aspects of the construction process are carefully considered and executed. By paying attention to these key factors, stakeholders in the construction industry can enhance the safety, durability, and functionality of buildings, and ultimately contribute to the creation of sustainable and resilient built environments.

2.2.2. Delay in Project Completion

Delay in project completion is a common issue faced by project managers across various

industries. It can have significant impacts on project outcomes, including increased costs, decreased quality, and reduced stakeholder satisfaction. Understanding the causes of project delays and implementing strategies to mitigate them is essential for successful project management.

One of the primary causes of project delays is poor planning and scheduling (Durdyev, 2021; Rezaei & Jalal, 2018). When project timelines are not properly established or realistic, it can lead to delay, as tasks take longer than anticipated to complete. Additionally, changes in project scope, resource constraints, and unexpected events can also contribute to delays in project completion (Kerzner, 2022).

In a study by Al-Hazim et al., (2017), it was found that inadequate project management practices, such as poor communication, lack of stakeholder involvement, and ineffective risk management, were significant contributors to project delays. Effective communication and stakeholder engagement are essential for ensuring that project goals are clearly understood and that all team members are aligned in their efforts to meet project deadlines (Al-Hazim et al., 2017).

To mitigate project delays, project managers can implement strategies such as setting realistic timelines, conducting regular progress reviews, and actively managing project risks. By proactively identifying potential delays and taking corrective action, project managers can minimize the impact of delays on project completion (Kerzner, 2022).

Numerous factors have played a role in causing time overruns or delays in construction projects. Trauner (2009) classifies these contributing factors into seven groups: delays caused by the client, consultant, contractor, labor, materials, equipment, and external sources.

Table 2. 1: Construction Delay Caused by Clients

No	Causes of Delay by clients
1	Delay in progress payments by owner
2	Delay to furnish and deliver the site
3	Change orders by owner during construction
4	Late in revising and approving design documents
5	Delay in approving shop drawing and sample materials
6	Poor communication and coordination

7	Slowness in decision making process
8	Conflicts between joint-ownership of the project
9	Suspension of work

Source: (Trauner, 2009)

Summarizing Table 2.1, construction delays can be contributed by various factors such as delays in progress payments by the owner, late furnishing of the site, and change orders during construction, delays in approving design documents and shop drawings, poor communication and coordination, slow decision-making processes, conflicts between joint project owners, and suspension of work. These issues can disrupt the construction schedule, lead to shortages of funds and materials, and cause delays in completing the project on time.

Table 2. 2: Construction Delay Caused by Contractor

No	Causes of Delay by Contractor
1	Difficulties in financing project by contractor
2	Conflicts in sub-contractors schedule in execution of project
3	Rework due to errors during construction
4	Conflicts between contractor and other parties (consultant and owner)
5	Poor communication and coordination
6	Ineffective planning and scheduling of project
7	Improper construction methods implement
8	Delays in sub-contractors work
9	Inadequate contractor's work
10	Frequent change of sub-contractors
11	Poor qualification of the contractor's technical staff
12	Delays in site mobilization

Source: (Trauner, 2009)

According to Trauner (2009), presented on Table 2.2, if the contractor faces financial challenges, they may struggle to secure funds for materials, labor, and other project expenses, leading to delays in the construction process. Similarly, conflicts in the schedules of sub-contractors can disrupt the

workflow and coordination on the construction site, causing delays in completing tasks and milestones. On the other hands, lack of clear communication and coordination among project team members can result in misunderstandings, errors, and delays in the construction process.

Inadequate project planning and scheduling can also lead to inefficiencies, delays in task completion, and overall project delays.

Table 2. 3: Construction Delay Caused by Contractor

No	Causes of Delay by Consultants
1	Delay in approving major changes in the scope of work
2	Poor communication and coordination
3	Inadequate experience of consultant
4	Mistakes and discrepancies in design documents
5	Delays in producing design documents
6	Unclear and inadequate details in drawings
7	Insufficient data collection and survey before design
8	Un-use of advanced engineering design software

Source: (Trauner, 2009)

Table 2.3 presents 8 points which are construction delays caused by consultant. These issues can contribute to setbacks in project timelines, increased costs, and compromised quality of work.

2.2.3. Affordability and Accessibility

Affordability in housing refers to the ability of individuals or households to secure housing that meets their basic needs without experiencing financial hardship (Haffner & Hulse, 2021). It involves the cost of housing relative to the income of the residents, taking into account factors such as rent or mortgage payments, utilities, maintenance, and other associated costs. Affordable housing aims to ensure that individuals or families can access decent and safe housing that does not consume an unreasonable portion of their income, allowing them to meet other essential needs and maintain a reasonable standard of living.

Accessibility in housing pertains to the ease with which individuals can physically reach and utilize

housing services(Hernandez, 2018). It encompasses factors such as proximity to essential amenities, public transportation options, infrastructure, and services that support daily living activities. Accessible housing ensures that residents, regardless of age, ability, or socioeconomic status, can easily navigate and utilize their living environment, promoting independence, inclusion, and quality of life (Davern et al., 2020). In the context of urban planning and development, accessibility also considers the design of housing projects to accommodate diverse needs and promote social inclusion.

Affordability and accessibility are two key challenges facing residents of Addis Ababa, the capital city of Ethiopia(Mohammed & Senadheera, 2022). As the city continues to grow rapidly, these issues become increasingly pronounced, with many residents struggling to access basic services and afford the cost of living in the city. In this literature review, we will explore the various factors contributing to these challenges and examine potential solutions to address them.

One of the main reasons for the affordability and accessibility challenges in Addis Ababa is the rapid urbanization and population growth that the city has experienced in recent years(Habitat, 2017). According to the World Bank, the population of Addis Ababa has more than doubled in the past two decades, putting significant pressure on the city's infrastructure and services(A. D. Bank, 2019). This rapid growth has led to a shortage of affordable housing, as well as increased demand for transportation and other basic services.

According to a report by the Ethiopian government, the city is facing a severe shortage of housing, with an estimated deficit of over 400,000 units(Construction, 2018). This shortage has led to skyrocketing rents and property prices, making it difficult for low and middle-income residents to find affordable housing in the city. As a result, many residents forced to live in informal settlements or overcrowded housing, which can have negative impacts on their health and well-being.

In addition to the lack of affordable housing, transportation is another major accessibility challenge facing residents of Addis Ababa. The city's public transportation system is inadequate to meet the needs of its growing population, with long wait times, overcrowded buses, and unreliable service. Many residents rely on informal transportation options such as minibusses and taxis, which can be expensive and unsafe. This lack of reliable and affordable transportation options can make it difficult for residents to access education, employment, and other essential services in the city.

Another factor contributing to the affordability and accessibility challenges in Addis Ababa is the high cost of living in the city. According to a report by the African Development Bank, Addis Ababa is one of the most expensive cities in Africa, with high prices for food, housing, and other essential goods and services. This high cost of living can make it difficult for low and middle-income residents to afford basic necessities, leading to high levels of poverty and inequality in the city (W. Bank, 2020).

In order to address the affordability and accessibility challenges in Addis Ababa, it is essential for the government and other stakeholders to take action. One potential solution is to invest in the development of affordable housing in the city. This could involve building new housing units, as well as upgrading existing informal settlements to provide better living conditions for residents. By increasing the supply of affordable housing, the government can help to reduce rents and property prices, making it easier for residents to find a place to live.

Improving the city's public transportation system is another important step towards addressing the accessibility challenges in Addis Ababa. This could involve expanding the public transportation network, improving the quality and reliability of service, and reducing fares for low-income residents. By providing residents with affordable and reliable transportation options, the government can help to improve access to education, employment, and other essential services in the city.

In addition to these measures, it is also important for the government to address the high cost of living in Addis Ababa. This could involve implementing policies to reduce prices for essential goods and services, as well as increasing wages and social protections for low and middle-income residents. By taking action to make the city more affordable for all residents, the government can help to reduce poverty and inequality in Addis Ababa.

In conclusion, the affordability and accessibility challenges facing residents of Addis Ababa are complex and multifaceted. Rapid urbanization, a shortage of affordable housing, inadequate transportation, and high cost of living are all contributing factors to these challenges. By investing in affordable housing, improving public transportation, and addressing the high cost of living, the government can help to make Addis Ababa a more livable and inclusive city for all residents.

2.2.4. Lack of Transparency

Lack of transparency in housing projects is a significant challenge that can have wide-ranging implications for stakeholders, including government agencies, developers, investors, and residents. In this literature review, we will explore the various factors contributing to the lack of transparency in housing projects and examine potential solutions to address this issue.

One of the main reasons for the lack of transparency in housing projects is the complex and often-opaque nature of the real estate development process. According to a study by the Urban Land Institute, the housing development process involves multiple stakeholders, including developers, contractors, government agencies, and financial institutions, each with their own interests and objectives (Institute, 2018). This complexity can make it difficult for stakeholders to access accurate and up-to-date information about the status of a project, leading to a lack of transparency and accountability.

Another factor contributing to the lack of transparency in housing projects is the limited availability of data and information about the real estate market. According to a report by Transparency International, many countries lack comprehensive data on housing supply, demand, and pricing, making it difficult for stakeholders to make informed decisions about housing projects (International, 2019). This lack of data can create opportunities for corruption, fraud, and mismanagement in the housing sector, undermining the integrity and credibility of development projects.

The lack of transparency in housing projects can also have negative impacts on residents and communities. According to a study by the International Housing Coalition, the lack of information about housing projects can lead to mistrust and conflict between developers and residents, as well as concerns about the impact of development on the environment and quality of life. Without transparent and inclusive decision-making processes, residents may feel marginalized and excluded from the development process, leading to social tensions and resistance to new housing projects.

In order to address the lack of transparency in housing projects, it is essential for stakeholders to take action (Kusters et al., 2018). One potential solution is to improve the collection and dissemination of data and information about housing projects. This could involve creating a

centralized database of housing projects, including information on financing, construction progress, and occupancy rates, to provide stakeholders with access to timely and accurate information about the status of a project.

Another important step towards improving transparency in housing projects is to strengthen regulatory oversight and enforcement mechanisms. According to a report by the World Bank, many countries lack effective regulatory frameworks for the real estate sector, leading to opportunities for corruption and mismanagement. By implementing stronger regulatory mechanisms, including transparent procurement processes, monitoring and evaluation systems, and anti-corruption measures, governments can help to ensure that housing projects developed in a transparent and accountable manner. Brooks et al., (2022) concludes the links between transparency, accountability, responsibility, and performance according to Figure 2.1.



Figure 2. 1: Links between transparency, accountability, responsibility, and performance

Source: (Brooks et al., 2022)

In addition to these measures, it is also important for stakeholders to engage in open and inclusive decision-making processes when planning and implementing housing projects (Axelsson & Granath, 2018, 2018; Chu & Cannon, 2021). This could involve consulting with residents and communities, as well as civil society organizations and other stakeholders, to ensure that their concerns and interests taken into account. By promoting transparency, accountability, and

participation in the housing development process, stakeholders can help to build trust and confidence in the real estate sector and create more sustainable and inclusive housing projects.

In conclusion, the lack of transparency in housing projects is a complex and multifaceted challenge that can have significant implications for stakeholders and communities. By improving data collection and dissemination, strengthening regulatory oversight, and promoting inclusive decision-making processes, stakeholders can help to address this issue and ensure that housing projects developed in a transparent and accountable manner.

2.2.5. Infrastructure and Amenities

Infrastructure and amenities play a crucial role in determining the performance of housing projects. Infrastructure refers to the basic physical and organizational structures and facilities needed for the operation of a society, such as transportation systems, water and sewage systems, and communication networks. Amenities, on the other hand, are features that enhance the quality of life and make a place more attractive to potential residents, such as parks, schools, and recreational facilities.

Several studies have highlighted the importance of infrastructure and amenities in influencing housing projects performance. For example, a study by Liang et al. (2018) found that the availability of good infrastructure, such as roads and public transportation, can increase the value of housing projects and attract more buyers. Similarly, a study by Yuan et al. (2020) showed that the presence of amenities, such as parks and shopping centers, can enhance the desirability of housing projects and lead to higher property values.

Furthermore, infrastructure and amenities can also have a direct impact on the quality of life of residents in housing projects. For instance, a study by Cleland et al. (2019) found that access to green spaces and recreational facilities can improve residents' physical and mental well-being, leading to higher levels of satisfaction with their housing environment.

However, it is important to note that the relationship between infrastructure, amenities, and housing projects performance is not always straightforward. For example, a study by Liang et al. (2018) found that while the presence of amenities can increase property values, it can also lead to gentrification and displacement of low-income residents.

In conclusion, infrastructure and amenities play a crucial role in determining the performance of housing projects. They not only influence property values and attractiveness to potential buyers but also affect the quality of life of residents.

2.2.6. Community Engagement

Community engagement can enhance the success of housing projects by ensuring that the needs and preferences of the community taken into consideration. A study by Kou et al. (2019) found that involving residents in the planning and design process of housing projects lead to more sustainable and socially inclusive developments. Community engagement can also foster a sense of ownership and pride among residents, leading to higher levels of satisfaction with their housing environment (Miraftab & Huq, 2024). Furthermore, community engagement can help identify potential challenges and barriers early on in the development process and facilitate the implementation of effective solutions. For example, a study by Bouzguenda et al. (2019) showed that engaging with the community in the design phase of a housing project can help address concerns related to traffic congestion, noise pollution, and other environmental impacts.

Moreover, community engagement can build trust and foster positive relationships between developers, government agencies, and residents. A study by Jackson et al. (2018) found that transparent and inclusive decision-making processes can help reduce conflicts and resistance to new housing projects, leading to smoother implementation and greater community support.

However, there are challenges and limitations associated with community engagement in housing projects. For example, achieving meaningful participation from marginalized or underrepresented groups can be difficult due to barriers such as language barriers, lack of access to information, and power differentials (Cornwall, 2008). Additionally, balancing the varying interests and priorities of different stakeholders in the community can be challenging and may require careful negotiation and compromise. Gunn et al. (2022) concludes community engagement principles according to Figure 2.2.



Figure 2. 2: Community engagement principles

Source: Gunn et al. (2022)

In general, community engagement is an essential component of successful housing projects, as it can enhance project performance, foster community ownership, and build trust among stakeholders.

2.2.7. Sustainability Practices

Sustainable practices in housing projects can reduce energy consumption, decrease carbon emissions, and minimize waste generation. However, implementing sustainable practices in housing projects can present numerous challenges that addressed to ensure success.

Cost is of the significant challenges of incorporating sustainability practices in housing projects is the high upfront costs associated with implementing green technologies and materials. Sustainable building materials are often more expensive than traditional materials and green technologies such as solar panels and energy-efficient appliances require a significant initial investment(Aghdam et al., 2018). Developers and homeowners may be hesitant to invest in sustainable practices due to concerns about cost-effectiveness and return on investment. Okafor C, (2014), developed sustainable construction framework according to Figure 2.3.

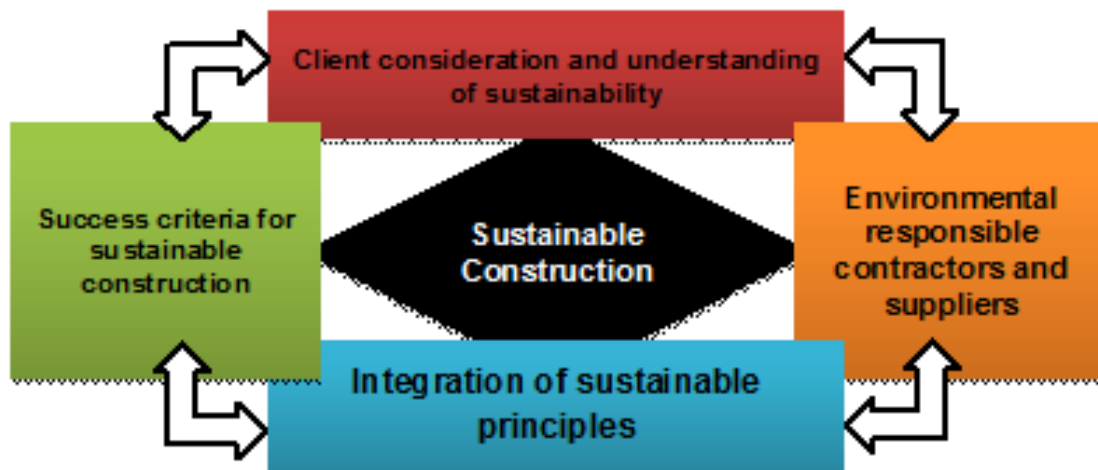


Figure 2. 3: Proposed sustainable construction framework

Source: Okafor C, (2014)

Another significant challenge in the adoption of sustainability practices in housing projects is the lack of awareness and education among developers, architects, and homeowners (Adabre et al., 2020). Many stakeholders are unfamiliar with the benefits of sustainable building practices and may not fully understand the technologies and strategies available to improve the environmental performance of housing projects. This lack of awareness can hinder the adoption of sustainable practices and slow progress towards reducing the environmental impact of the housing sector.

Regulatory barriers can also be a significant challenge in implementing sustainability practices in housing projects. Building codes and zoning regulations may not always support sustainable design and construction practices, making it difficult for developers to incorporate green building techniques into their projects (Leiringer, 2020). Additionally, permitting processes and approval requirements for sustainable technologies can be complex and time-consuming, further impeding the adoption of sustainable practices in the housing sector.

Adabre et al. (2020) concluded access to resources, including skilled labor, sustainable building materials, and financing, can be a significant barrier to implementing sustainability practices in housing projects. Many developers may not have access to the necessary resources and expertise to incorporate green technologies and materials into their projects. Lack of access to financing for sustainable building practices can also prevent developers from investing in environmentally

friendly building solutions.

Resistance to change among developers, architects, and homeowners can also hinder the adoption of sustainability practices in housing projects. Many stakeholders may be hesitant to depart from traditional building practices and may perceive sustainable design and construction as risky or unfamiliar. Overcoming resistance to change and promoting a shift towards sustainable practices requires education, outreach, and engagement with stakeholders to build awareness and promote the benefits of green building.

Thus sustainability practices in housing projects offer significant environmental and economic benefits, but challenges such as cost, lack of awareness, regulatory barriers, limited access to resources, resistance to change, and maintenance and longevity issues must be addressed to ensure successful implementation. By working together to overcome these challenges and promote sustainable design and construction practices, stakeholders can make a positive impact on the environment and create healthier, more efficient housing for future generations.

2.2.8. Land tenure and Property Rights Issues

Land tenure and property rights issues play a significant role in the housing construction process. These issues have a direct impact on the availability of land for housing development, the security of property ownership, and the efficiency of the construction process. Secure land tenure and property rights are essential for facilitating housing construction. According to De Soto & Diaz (2002), strong property rights provide individuals with the security and incentives necessary to invest in land, improve infrastructure, and build new housing units. In contrast, insecure land tenure can lead to informal or illegal construction, as individuals may be reluctant to invest in properties without the assurance of legal protections (Lombard & Rakodi, 2016).

Furthermore, land tenure and property rights issues can create barriers to accessing land for housing construction. For example, unclear ownership, overlapping claims, and conflicting regulations can lead to land disputes and impede the development process (Scott, 2013). This is particularly relevant in the context of urban areas, where rapid urbanization and informal settlements exacerbate land tenure challenges (Scott, 2013). Studies by Durand-Lasserve & Royston (2002) and Fernández-Cornejo et al. (2012) highlight the detrimental effects of insecure land tenure on housing construction, particularly in developing countries.

In addition, land tenure issues can affect the affordability of housing construction. High land prices and limited availability of land can increase the cost of development, making housing construction unaffordable for low-income households (Scott, 2013). This may lead to a shortage of affordable housing and exacerbate housing inequality. Moreover, ambiguous property rights can hinder access to formal financing and credit, further constraining the ability of individuals to invest in housing construction.

To address these challenges, scholars and policymakers have proposed various strategies to strengthen land tenure and property rights. For example, titling programs, land regularization initiatives, and participatory planning processes advocated as means to formalize land ownership and improve security of tenure (Payne et al., 2009; Fernández-Cornejo et al., 2012). Moreover, legal and institutional reforms, such as simplifying land registration procedures and clarifying property rights, recommended to address land tenure challenges and promote housing construction (Durand-Lasserve & Royston, 2002).

In conclusion, land tenure and property rights issues have significant implications for housing construction. Insecure land tenure can impede the availability, affordability, and security of housing, particularly in the context of informal settlements and urban expansion. Addressing these challenges requires a multi-faceted approach, including legal and institutional reforms, land regularization programs, and participatory planning processes. By strengthening land tenure and property rights, housing construction facilitated, leading to improve access to affordable and secure housing for all.

2.2.9. Social Inclusion and Diversity

One of the key factors that influence the design and construction of inclusive housing developments is the need to accommodate individuals from different social and cultural backgrounds. Research has shown that housing designed to meet the needs of diverse populations can help foster a sense of community and belonging, leading to improved social cohesion and overall well-being. Inclusive housing design features such as wheelchair-accessible entrances, ramps, and wide doorways also ensure that individuals with disabilities are able to live independently and participate fully in their communities (Smith & Dropkin, 2018).

Additionally, the concept of social inclusion in housing construction extends beyond physical

accessibility to include the promotion of diversity and multiculturalism. Studies have suggested that diverse communities are more resilient and better able to adapt to changing social and economic conditions(Ribeiro & Gonçalves, 2019). By incorporating features that reflect the cultural diversity of residents, such as community gardens, cultural centers, and public art installations, housing developments can create vibrant and inclusive spaces that foster a sense of belonging and mutual respect among residents.

Furthermore, research has indicated that social inclusion and diversity in housing construction can have positive economic benefits for developers and local governments(Wang et al., 2021). Inclusive housing developments shown to attract a wider range of residents, including young professionals, families, and retirees, resulting in increased property values and economic growth in surrounding areas. By creating housing that is accessible and affordable to individuals from all occupation, developers can maximize the potential for long-term sustainability and profitability.

The principles of social inclusion in housing project aimed at promoting diversity, equality, and the empowerment of marginalized communities through the provision of affordable and accessible housing.

One of the key principles of social inclusion in housing projects is the promotion of diversity and inclusivity. This involves designing housing projects that cater to the needs of a diverse range of residents, including individuals from minority backgrounds, people with disabilities, and low-income households. By creating a mix of housing types and sizes, housing projects can help to foster social cohesion and create a sense of community among residents (Baiocchi et al., 2020; Cell & Bhawan, 2019).

Another important principle of social inclusion in housing projects is the provision of affordable housing. Affordable housing is essential for ensuring that low-income individuals and families have access to safe and secure housing options. By incorporating affordable housing units into housing projects, developers can help to address the issue of housing affordability and prevent social exclusion(Han et al., 2021).

Furthermore, the principle of empowerment is crucial in promoting social inclusion in housing projects. Empowerment involves giving residents a voice in the design and management of their housing projects, as well as providing them with the resources and support they need to thrive. By

empowering residents, housing projects can help to build a sense of agency and ownership among residents, leading to more inclusive and sustainable communities (Baiocchi et al., 2020).

In conclusion, the principles of social inclusion in housing projects are vital for creating more equitable and cohesive communities. By promoting diversity, affordability, and empowerment, housing projects can help to break down barriers to social inclusion and create a more inclusive society for all residents. By incorporating these principles into the design and management of housing projects, developers can help to create vibrant and inclusive communities that benefit everyone.

2.2.10. Regulatory Compliance

One major challenge in regulatory compliance in social housing projects is the ever-evolving regulatory environment. Laws and regulations governing social housing projects are constantly changing, making it difficult for developers to keep up with the latest requirements. For instance, a study conducted by Macmillan et al. (2018) found that changes in building regulations and environmental standards have had a significant impact on the design and construction of social housing projects, leading to delays and increased costs.

Another challenge is the lack of clarity and consistency in regulatory requirements. Different agencies and jurisdictions may have varying interpretations of regulations, leading to confusion and potential conflicts. This highlighted in a study by Loosemore et al. (2021), which found that conflicting regulations and requirements from different government departments often create compliance challenges for social housing projects.

Additionally, resource constraints can also pose a major challenge in achieving regulatory compliance in social housing projects. Limited funding, expertise, and man power can make it difficult for developers to meet all the necessary regulatory requirements. A study by (Z. Liu et al., 2023) identified resource constraints as a key barrier to regulatory compliance in social housing projects, with many developers struggling to allocate sufficient resources to ensure compliance with all regulations.

Furthermore, social housing projects often face challenges related to community engagement and stakeholder involvement in the regulatory compliance process. Engaging with residents,

community groups, and other stakeholders is crucial for ensuring that social housing projects meet their needs and expectations. However, a study by Jones et al. (2017) found that inadequate stakeholder engagement lead to resistance, delays, and ultimately non-compliance with regulatory requirements.

In general, achieving regulatory compliance in social housing projects is a complex and challenging task that requires careful planning, coordination, and stakeholder engagement. The evolving regulatory environment, lack of clarity and consistency in regulatory requirements, resource constraints, and poor stakeholder engagement are some of the key challenges that must be addressed to ensure the successful delivery of social housing projects that comply with all relevant regulations.

2.3. The Housing Challenge in Addis Ababa

The population of AA City, the capital of Africa, is growing with time. According to the CSA (2015), AA has 3.3 million people. Based on this number, AA's population symbolizes 3.6% of the country's total inhabitants and 18% of Ethiopia's urban population. Its population has grown at a pace of 2.1% each year.

Table 2. 4. Addis Ababa Population data since 1950 to 2030 forecast.

Year	Population	Annual Change
1950	392000	0.00
1960	519000	2.77
1970	729000	4.89
1980	1175000	4.91
1990	1791000	3.95
2000	2377000	2.1
2010	3126000	4.34
2020	4794000	4.4
2030	7352000	4.18

Source: United Nation projection

From Table 2.4, urban population of AA is increasing year to year. The annual change means the number of population difference in each year, for example: In 2023, the population of AA's metropolitan area estimated to be 5,461,000, showing a 4.46% growth compared to the previous year. Similarly, in 2022, the population was 5,228,000, representing a 4.43% increase from 2021. The population in 2021 was 5,006,000, with a 4.42% rise from 2020. In 2020, the population reached 4,794,000, indicating a 4.4% growth from 2019. The population fluctuates from year to year, showing varying rates of increase or decrease.

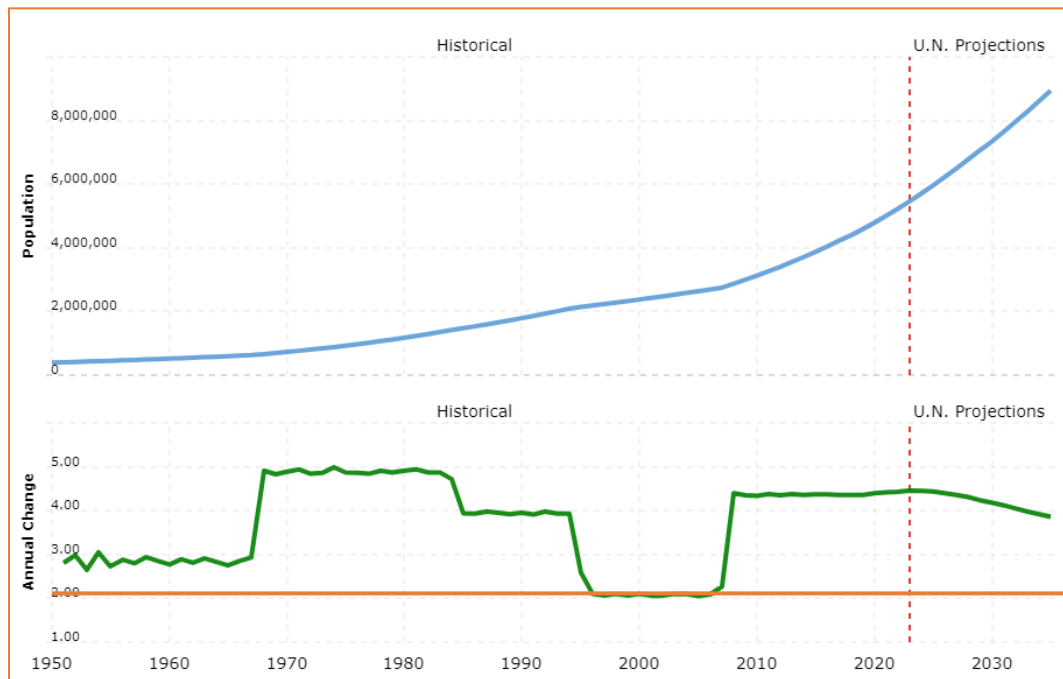


Figure 2. 4. Addis Ababa population change graph

Source: (Nations, 2023)

With this increased urban population, housing demand increased from day to day in the city. Since the founding of AA as the principal of Ethiopia, the flow of inner movement from rural to urban areas, particularly to AA, has increased (Charitonidou, 2021). In each regime, there was different housing approach. However, in this paper, the modern approach to housing revisited. According to numerous scholars, there is a lack of comprehensive housing data in AA. The city's revised master plan in the early 2000s acknowledged a significant shortage of housing units, especially for low-income individuals, and noted the generally poor condition of existing housing stock (Delz

2016). According to the surveys, it was found that there is already a backlog of housing and there will be a demand for more housing by the year 2010. In 2000, the city already had a backlog of 233,000 housing units and it is estimated that an additional 223,000 units will be needed by 2010. According to the 2007 census, AA's housing stock was 628,986 units (Gezahegn, et al., 2022; Gezahegn et al., 2017; Tadesse et al., 2023). This study shows the demand for housing even from Delz (2016) report projection high. More than 75% of this stock built of mud and wood, and half of it is over 20 years old.

Regarding services, nearly all homes (98%) have access to running water, although only 32% have private connections. Furthermore, 15% of homes lack toilets, and 62% share communal toilets. Shockingly, more than 80% of households do not have a bathroom, and approximately 20% lack a kitchen (Charitonidou, 2021). The average increase housing availability between 1994 and 2004 was meager 2.3%, which falls of the average annual growth rate of 3% during the same period (Bihon, 2006). This disparity implies that around 65.7% of households impacted by the housing shortage, resulting in over a quarter of all households living in overcrowded conditions.

The government introduced a new approach to housing development. Housing was identified as the most essential basic need after food and water (Wube, 2008). The housing deficit was approximately 350,000, with 70% of the population living in unhealthy slums. In 2005, the AA city administration initiated a large-scale housing project aimed at alleviating urban poverty and improving living conditions for low and middle-income individuals (Charitonidou, 2021).

2.3.1. Housing Intervention and Approaches

According the literatures on housing need the number of dwelling units, regarded as socially desirable in terms of structural quality and rates of occupancy, sanitary and other facilities and standards of health and privacy.

Overall housing development and management, decreased the housing price and facilitates its accessibility, contributed directly to poverty reduction, sustainable livelihoods and pro-poor growth, are increasingly recognized as political subjects, created a great sense of relief and an improved sense of security in having a stable place to live. Inner city improvement (slum areas redevelopment), Promoted economic use of the urban land, promoted saving culture among the poor, encouraged an environmentally friendly approach, and facilitated affordable payment modalities.

Housing required to replace deteriorated units, relieve overcrowding and house new families (for both backlog and future) in the case of Effective need for housing Influenced by affordability (economic capacity) and willingness to buy, construct and to rent(Imam Mohamoud Hussen, 2010).

2.3.2. Integrated Hosing Development Program

Integrated Housing Development Program (IHDP), aimed to assist low-income households in purchasing homes. Under this program, successful applicants would only be responsible for paying for the construction of their units, while the government would provide the land. The city government proposed 2 housing projects, named 20/80 and 40/60, totaling 139,008 housing units, according to the IHDP report of 2022. According to the bureau report, the new 10 years strategy plan prepared to construct 2,000,000 (two million) housing units. The report proposal indicated that government would construct 400,000 housing units and 1,600,000 housing units constructed by private housing development sectors.

Among them, in the first 5 years, government will construct 200,000 housing units and 800,000 will be by private sectors. However, the office has reported to construct rather in 2021/22 year only 342,393 housing units; 112,325 housing units by government and 230,068 by private sectors. According to IHDP, report (2020) housing units transferred from 2004 to 2020 were only 241,648 through lottery system to special needs, teachers, low salary groups, internal displaced groups, cabinets and least low income groups. As the report of IHDP (2022), house constructed during the date were less according to its schedule and strategic plan because of lack of prepared urban land, finance, and insecurity issue on displaced people from construction site. The Bureau's 10-year plan calls for the construction of 2,000,000 units (800,000 by the government and 1,200,000 by private developers) over the next ten years, however the project's performance is currently poor, according to the report.

Table 2. 5. IHDP 2015-2020 housing construction report

Budget year	Construction to be start plan			Construction started houses			Accomplishment (%)
	20/80	40/60	Total	20/80	40/60	Total	
Up to 2015	50,000	22,678	72,678	50,000	22,678	72,678	100%
2016	40,000	2,322	42,322	41,421	16,854	58,275	138%
2017	40,000	15,000	55,000	---	----	----	0%
2018	40,000	15,000	55,000	9,347	----	9,347	17%
2019	40,000	15,000	55,000	----	----	----	0
2020	40,000	15,000	55,000	704	3,192	3,896	37%
	250,000	85,000	335,000	101,472	42,724	144,196	43%
Rental	15,000	---	15,000	440	---	440	3%

Source: (IHDP, 2022)

From the Table 2.5, in 2017 and 2019 no housing projects were started. In addition, the overall IHDP report indicates 46% achieving from year 2015 to 2020. Even the city housing development office proposed 10 years housing construction strategy because of urban rural-migration, the housing demand was imbalanced. According to Tesfaye (2007), there is a significant disparity between the supply and demand for housing in AA. The demand for residential housing is high, but the shortage of residential land has caused prices to skyrocket, making it unaffordable for many, including the residents of AA. According to AACPPO, (2017) six important variables, taken in to account to estimate housing backlog. They were existing supply, population growth, backlog, dilapidation, overcrowding, conversion and contingency. Considering these factors 10 years for casted housing backlog of AA is 1,172,195(AACPPO, 2017).

Some of the housing challenges identified several scholars were:

Rapid urbanization: is main causes, rural to urban migration, natural population increase and boundary redefinition of cities. In 2001, about 900 million lived in slums, in 30 years' number of 'slum' dwellers, will be about 2 billion. Overburdened meagre resources and Overcrowded Slums(Habitat, 2017).

Urban poverty: Inequalities, discrepancies of access to local resources, spatial locations, societal organizations, personal relationships, land ownership and tenure, environmental degradation is-lands of activities, for those who can afford, surrounded by slums (Tsegaye, 2006).

In addition, informal settlements, lack of affordable housing options, inadequate housing policy and regulation, land tenure issues and limited access to finance(Yap, 2016).

2.4. Responsive Parties in Housing Projects

Responsive organizations in housing projects play a noble role in ensuring the successful implementation and management of projects to meet the needs of residents and comply with regulations. One key aspect of responsive organizations in housing projects is their ability to adapt and respond to changing regulatory requirements. As highlighted by Kullman et al. (2019), responsive organizations are proactive in staying abreast of regulatory changes and ensuring that their projects comply with the latest standards and guidelines. This adaptability is essential for addressing the challenges posed by the evolving regulatory landscape in social housing projects.

Furthermore, responsive organizations demonstrate a high level of stakeholder engagement and collaboration in housing projects. Engaging with residents, community groups, government agencies, and other stakeholders is crucial for ensuring that projects designed and managed in a way that meets the needs and expectations of all parties involved. A study by Solar Serrano et al. (2020) found that responsive organizations prioritize stakeholder engagement as a key strategy for achieving regulatory compliance and promoting positive outcomes in housing projects. In this section, we explore the pivotal roles played by key stakeholders such as contractors, clients, and consultants in the successful realization of housing projects.

2.4.1 Contractors/Subcontractors

Contractors and subcontractors play a crucial role in the successful completion of housing projects. They are responsible for overseeing and carrying out various aspects of the construction process, from planning and design to actual building and finishing (B. J. Jackson, 2020). One of the key roles of contractors in housing projects is to manage the overall construction process. They are responsible for coordinating various activities, such as obtaining permits, hiring and supervising subcontractors, and ensuring that the project completed on time and within budget. Contractors also play a crucial role in ensuring the quality of workmanship and materials used in the

construction process (B. J. Jackson, 2020).

Subcontractors, on the other hand, are responsible for carrying out specific tasks within the construction process, such as plumbing, electrical work, or roofing (Keskiniva et al., 2020). They work under the supervision of the main contractor and are essential for the successful completion of housing projects. Subcontractors often hired based on their expertise and experience in specific areas, and they play a vital role in ensuring that different aspects of the construction process completed to the required standards.

On his study Martin & Benson (2021), concluded that contractors and subcontractors relationship very important for the success of one project. He summarized that, building relationship quality between principal contractors and subcontractors, managers should focus on six main factors: general communications; commitment towards collaboration; innovation; integrity; respect and fairness; effective contract management; and industrial relations management. Of these six factors, integrity, respect and fairness is by far the most important factor highlighting the need for much more research into areas such as organizational justice and ethics in more deeply understanding this under investigated area.

Relationships with Subcontractors and Suppliers: Despite the essential roles that contractors and subcontractors play in housing projects, they often face challenges and issues that can affect the overall success of the project. One common issue is the lack of communication and coordination between contractors and subcontractors, which can lead to delays and inefficiencies in the construction process (Kshaf et al., 2022). In addition, disputes over payment and scheduling can also arise between contractors and subcontractors, further complicating the construction process (Shash & Habash, 2021). On the other hands inflation is a factor that affect building project performance. According to Musarat et al. (2021) finding, due to inflation the building material prices, labor wages and machinery hire rates changes every year, resulting in the project's initial budget being deviated from the final budget. Contractor capacity itself very importance for the building project performance.

Expertise and Experience: Contractors with a proven track-record of successfully completing housing projects are more likely to have the necessary skills and knowledge to effectively manage all aspects of the construction process. Experienced contractors are also better equipped to

anticipate and address potential challenges that may arise during the project, leading to a more efficient and successful construction process (Alzoubi, 2022).

Resources and Infrastructure: The capacity of a contractor also influenced by their access to resources and infrastructure. Contractors with sufficient financial resources, access to skilled labor, and modern equipment better positioned to handle the demands of a housing project effectively (Harris et al., 2021). Adequate resources and infrastructure enable contractors to meet project deadlines, ensure quality workmanship, and address any unexpected issues that may arise during the construction process. In generally a study, conduct by Benon (2012) in Uganda measured the contractor's performance according to Figure 2.5.

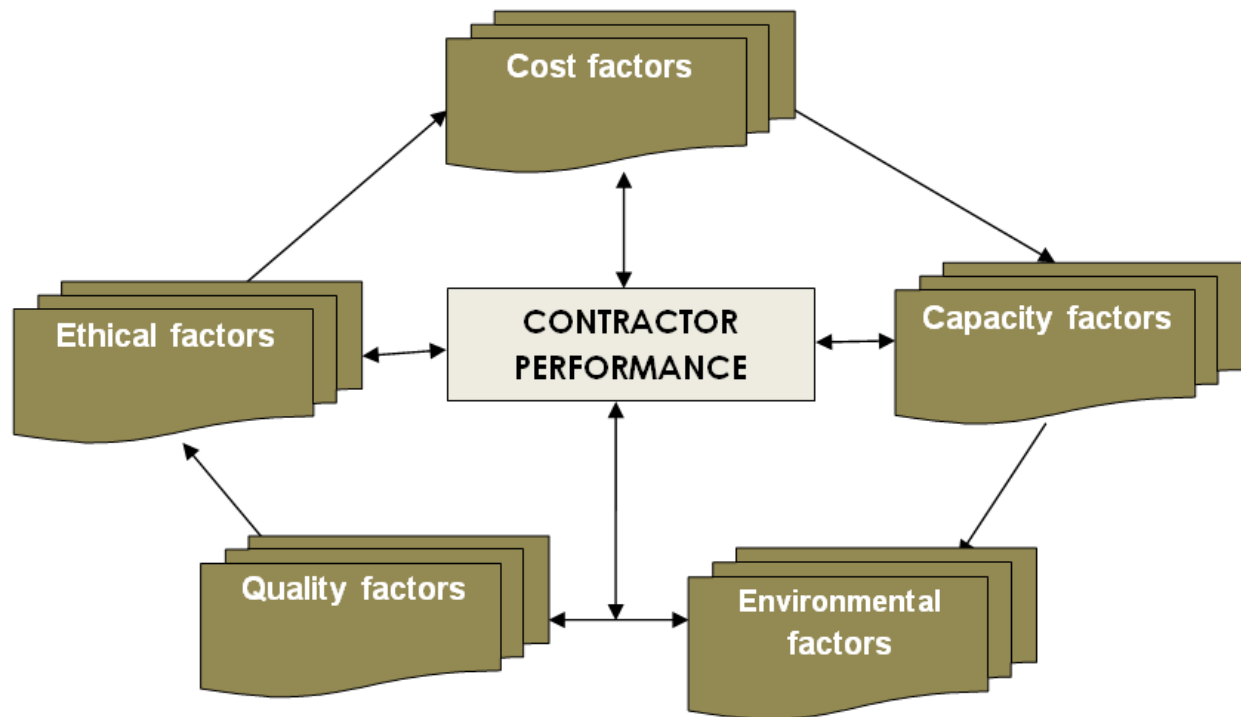


Figure 2. 5: Contractors' performance framework in Uganda

Source: Benon (2012)

Presented on Figure 2.5, the contractor performance measured by among the five (cost, ethical, quality, capacity and environmental factors).

Project Management Skills: Effective project management is essential for the success of housing projects, and a contractor's capacity to manage multiple tasks, coordinate various activities, and

communicate effectively with stakeholders is crucial. Contractors with strong project management skills can ensure that the project stays on schedule, within budget, and meets the required quality standards. Effective project management also involves the ability to identify and mitigate risks, resolve conflicts, and ensure clear communication among all parties involved in the construction process (Alzoubi, 2022).

2.4.2 Consultants

Consultants play a pivotal role in housing projects by providing specialized expertise and support throughout the project lifecycle. According to Schwalbe (2018), consultants bring valuable skills and knowledge to the table, assisting stakeholders in project planning, design, and execution. These experts contribute to the successful completion of housing projects by offering guidance on various aspects such as feasibility studies, regulatory compliance, architectural design, and construction management.

One of the primary roles of consultants in housing projects is to conduct feasibility studies and assess the viability of the project. Kerzner (2022) emphasizes the importance of these studies in determining factors such as market demand, financial feasibility, and site suitability. Consultants use their expertise to analyze data, identify risks, and provide recommendations to help project stakeholders make informed decisions before proceeding with the development.

In addition to feasibility studies, consultants play a crucial role in architectural and engineering design. Dionisio (2018) highlights that architects, structural engineers, and other design professionals collaborate with clients to create functional and aesthetically pleasing housing solutions. Consultants translate client requirements into detailed design drawings, ensuring that the project meets regulatory standards, building codes, and industry best practices.

Furthermore, consultants oversee regulatory compliance and permitting processes in housing projects. They work closely with regulatory authorities to navigate planning regulations, obtain necessary permits, and ensure that the project adheres to legal requirements. By staying informed about changing regulations and codes, consultants help mitigate risks and ensure that the project progresses smoothly (Schwalbe, 2018). Throughout the construction phase, consultants provide valuable support in project management and quality assurance. They monitor construction activities, coordinate with contractors and subcontractors, and conduct quality inspections to

ensure that the project meets design specifications and quality standards. Consultants play a critical role in addressing construction issues, resolving conflicts, and maintaining project timelines and budgets (Kerzner, 2017). Some factors, which are affecting consultant role in housing project, are:

Client Expectations and Engagement: Clients' expectations, preferences, and level of engagement can greatly influence the consultant's role (Addimando, 2023). Clear communication of project objectives, scope, budget, and timelines from the client's end is crucial for consultants to deliver value-added services effectively.

Project Complexity and Scope: The complexity and scale of the housing project can affect the consultant's role significantly (Kabirifar & Mojtahedi, 2019). Larger, more complex projects may require specialized expertise, additional resources, and broader coordination efforts on the part of consultants to ensure successful project delivery.

Regulatory Environment and Compliance: Compliance with local building codes, zoning regulations, environmental requirements, and other legal standards can influence consultants' roles in housing projects. Consultants must stay informed about evolving regulations and ensure that the project meets all legal requirements throughout the development process.

Project Budget and Resource Constraints: The available budget, resources, and timelines allocated for the housing project can influence the consultant's role (Kabirifar & Mojtahedi, 2019). Consultants may need to balance cost constraints with project quality, efficiency, and stakeholder expectations, making strategic decisions to optimize project outcomes.

In conclusion, consultants contribute significantly to the success of housing projects by leveraging their expertise in project planning, design, regulatory compliance, construction management, and quality assurance. Their role is instrumental in ensuring that housing projects completed successfully, on time, and within budget, while meeting the needs and expectations of stakeholders and future residents.

2.4.3 Clients

One key aspect of client contribution in social housing projects is their involvement in the design process. Research by Ball and Dash (2015) found that clients who are actively engaged in the design of their homes are more satisfied with the final product and have a stronger sense of

ownership over their living space. This suggests that involving clients in the design process can lead to better outcomes for both the individuals and the project as a whole.

Another important way in which clients contribute to social housing projects is through their feedback and input during the construction phase. Czischke (2018) found that clients who were able to provide feedback on the construction process were more likely to be satisfied with the result and felt that their needs and preferences taken into account. This highlights the importance of listening to and incorporating client feedback in order to ensure the success of social housing projects.

In addition to their input during the design and construction phases, clients also play a crucial role in the maintenance and management of social housing projects. Research by Smith and Johnson (2017) found that when clients are actively involved in the upkeep of their homes and the surrounding community, there is a greater sense of pride and ownership among residents, leading to a more harmonious and sustainable living environment.

Faraji et al. (2020) concluded the organizations that predominantly act as a client and those that often enter into construction contracts as the buyer side of the deal, especially in the housing sector of the construction industry, must develop a dynamic system to address prospective sources selection activities. It is strongly recommended that such a system is established as an independent unit directly under the top management board because the outcomes of this unit have a remarkable effect on the project objectives besides that the process of their tasks can lead to corruption in the organization. For the success of one housing project, see the relation of client, consultant and contractor relation on Figure 2.6.

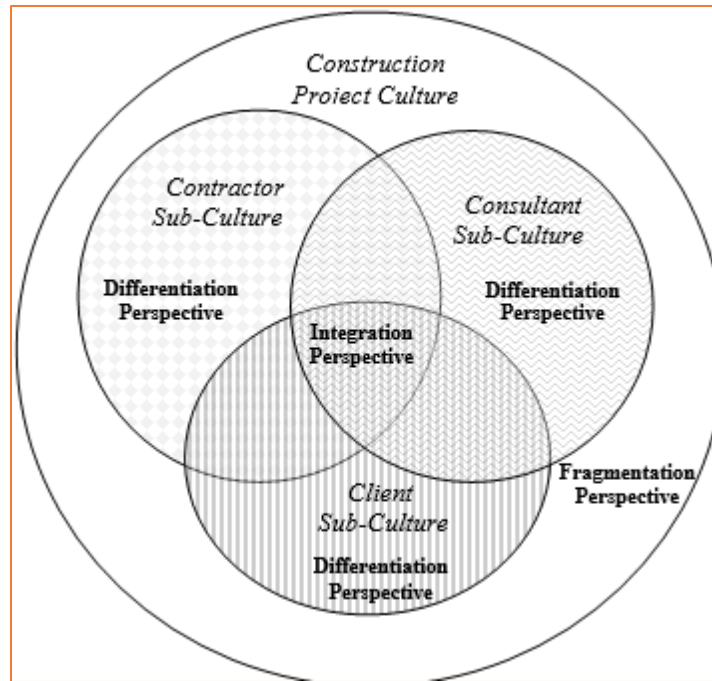


Figure 2. 6: Three-Perspectives of Construction Project Culture

Source: Mazher et al. (2017)

Accordingly, within a construction project cultural context, integration perspective includes the cultural manifestations agreed by all the members of the construction project team (Mazher et al., 2017). Further, differentiation perspective is valid for manifestations agreed within a given sub-cultural territory. A construction project can be consisted of client, contractor and consultant sub-cultures.

2.5. Factors for Effective and Efficient Building Projects

In the field of construction management, the use of effective work methodologies is crucial for achieving successful and efficient building projects. Work methodologies refer to the processes and practices that employed to plan, organize, and execute construction projects. One of the commonly used work methodologies in construction projects is the traditional project management approach. This approach involves breaking down the project into different phases, such as initiation, planning, and execution, monitoring, and closing. By following a systematic approach, project managers are able to effectively plan and control the project activities, leading to successful completion within the set timeframe and budget (Ibbs & Kwak, 2000).

According to Smith & Dropkin (2018), the construction of high efficient housing requires a combination of soft and hard skills in construction management. Based on(Harris et al., 2021) book tools, including enhanced planning and scheduling, quality control measures, training and skill development, and resource management, are essential for efficient project execution. Integrating technology, risk management strategies, and community engagement further contribute to project success (Zhang & Wong, 2018). By incorporating sustainability practices, streamlined communication, and lean construction principles, project managers can enhance performance and achieve optimal results in high efficient housing construction projects (Akanbi et al., 2019).

2.5.1. Work Methodologies

Housing projects are complex endeavors that require careful planning and organization to ensure success. One crucial aspect of any housing project is the selection of appropriate work methodologies. Work methodologies refer to the strategies and procedures used to carry out the various tasks and activities involved in the project. Effective planning and scheduling are essential components of successful housing projects. Enhanced planning and scheduling methodologies can help project managers optimize resources, reduce risks, and ensure timely completion of the project(Harris et al., 2021).

The Critical Path Method (CPM) is a popular scheduling technique used in housing projects to identify the critical path – the sequence of activities with the longest duration that determines the overall project timeline (Anastasiu et al., 2023; Bagshaw, 2021; Petroutsatou, 2022). By identifying the critical path, project managers can prioritize tasks that are most crucial for project success and allocate resources accordingly. CPM also allows project managers to identify activities that can be delayed or overlapped without impacting the project timeline (Anastasiu et al., 2023). This flexibility is particularly important in housing projects, where unforeseen challenges and delays are common. By using CPM, project managers can make informed decisions and adjust the schedule as needed to ensure project success.

Forbes & Ahmed (2020) study indicated Building Information Modeling (BIM) is a digital planning and design methodology that integrates 3D models and data to improve collaboration, communication, and decision-making in housing projects. BIM allows project stakeholders to visualize the project in a virtual environment, identify potential conflicts, and optimize building

designs before construction begins. In housing projects, BIM used to create detailed construction schedules, identify resource requirements, and simulate different scenarios to optimize project outcomes. By using BIM, project managers can reduce errors, improve coordination among team members, and streamline the construction process, leading to cost savings and timely completion of the project(Crowther & Ajayi, 2021).

Lean construction planning is also a methodology that focuses on maximizing value and minimizing waste in the construction process. Lean construction planning emphasizes efficient resource utilization, continuous improvement, and collaboration among project stakeholders (Sepasgozar et al., 2020). By applying lean principles, project managers can optimize the construction schedule, reduce delays, and improve overall project efficiency.

On the other hands, risk management planning is a critical component of enhanced planning and scheduling in housing projects. Identifying and assessing risks early on can help project managers anticipate potential challenges and develop mitigation strategies to minimize their impact on the project timeline(Harris et al., 2021). Risk management planning involves identifying potential risks, analyzing their likelihood and impact, and developing strategies to address them. In housing projects, risks related to external factors such as market fluctuations, regulatory changes, or weather conditions, as well as internal factors such as budget overruns, design changes, or resource constraints (Alshihri et al., 2022). By incorporating risk management planning into the project schedule, project managers can proactively address potential risks and ensure timely completion of the project.

2.5.2. Collaboration among Various Stakeholders

Collaboration among various stakeholders is crucial for the success of housing projects. Effective communication, coordination, and cooperation among project stakeholders, including owners, architects, contractors, suppliers, and regulatory authorities lead to improved project outcomes, reduced risks, and enhanced project delivery (Ebekozi et al., 2023). A study conducted by Ishaq et al. (2019) in Nigeria concluded clients and contractors and other participants in the industry are going to benefit if the client and contractor avoids or reduces all causes of poor communication between them. Good relationship and communication between the client and contractor will improve the quality of communication between them that will results to successful project delivery.

According to Nahyan et al. (2019) collaboration amongst the stakeholders need to emphasized strongly leading to high levels of trust being developed so that effective decisions can be made without wasting resources.

2.5.2.1. Strategies to Foster Collaboration among Stakeholders

Based on Oliveira & Rabechini (2019) study some of the strategies to foster collaboration among different stakeholders holders in building project are:

Establish Clear Communication Channels: Implementing clear communication channels, such as regular project meetings, progress reports, and digital collaboration tools, can help stakeholders stay informed and connected throughout the project lifecycle.

Encourage Transparency and Trust: Foster an environment of transparency and trust among stakeholders by sharing information openly, respecting diverse perspectives, and building strong working relationships based on mutual respect and trust.

Define Roles and Responsibilities: Clearly define roles and responsibilities for each stakeholder involved in the project to promote accountability, avoid misunderstandings, and ensure that everyone understands their contribution to the project's success.

Promote Collaboration through Technology: Utilize digital collaboration tools, such as project management software, Building Information Modeling (BIM), and virtual meeting platforms, to facilitate real-time communication, document sharing, and collaborative decision-making among stakeholders.

Encourage Stakeholder Engagement: Engage stakeholders in the decision-making process, seek their input and feedback, and involve them in key project discussions to promote ownership, commitment, and collaboration throughout the project lifecycle.

2.5.3. Management Tools on Informing Future

The management of quality in construction is an area of specialization that has been growing over the past three to four decades to embrace aspects of the project and company activities that often seen as remote from the physical product (Harris et al., 2021). He presented various concepts that considered having an influence on the quality. For example how constriction quality linked with

continues improvement, evidence based decisions, fault detections, waste minimization, respect for change and others.

Combing these aspects together, he mentions effective planning and risk management are crucial components of successful housing projects. Kerzner (2019) project planning involves defining project objectives, scope, and deliverables, and establishing a timeline for project execution. Risk management, on the other hand, focuses on identifying potential risks, assessing their impact, and developing strategies to mitigate or address them. Kerzner emphasize the importance of integrating risk management into the project planning process to enhance project resilience and performance.

On the other hands, stakeholder engagement and communication are essential for promoting collaboration and alignment among project stakeholders in housing projects (Nahyan et al., 2019).

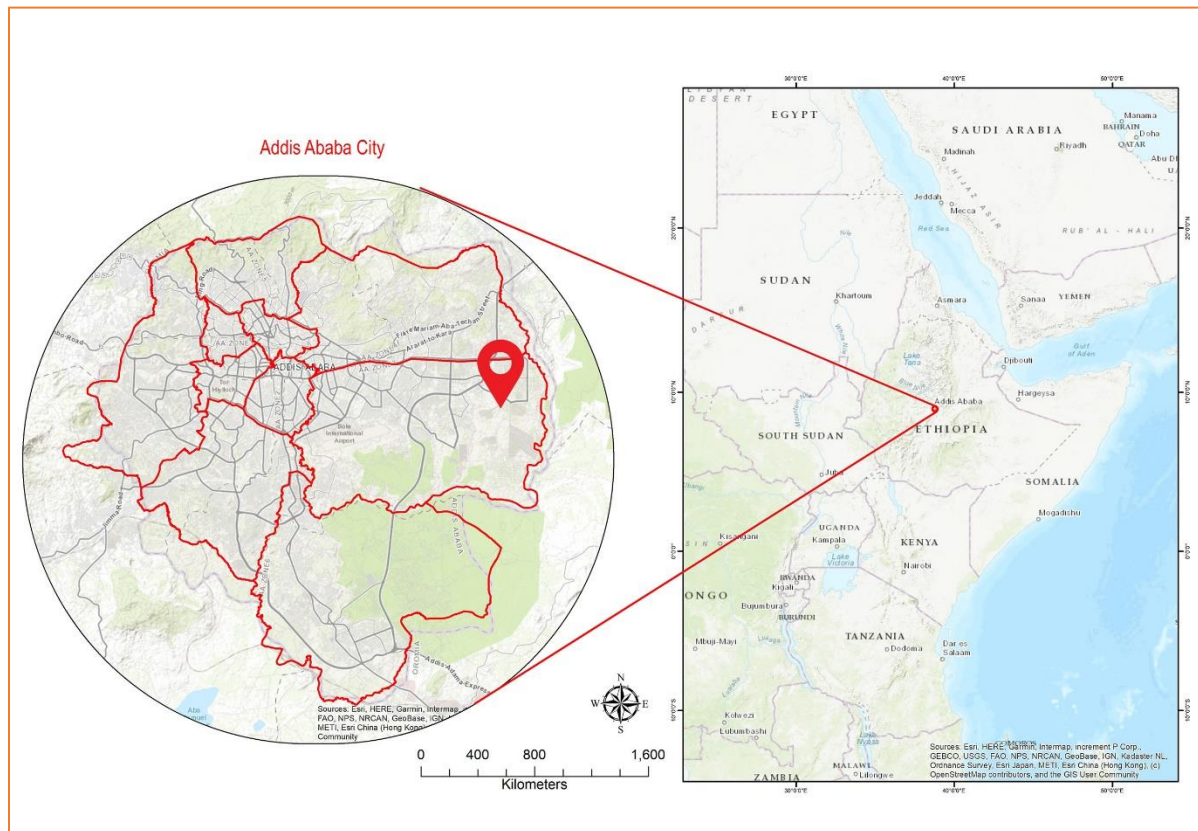
Alzoubi et al. (2022) quality control and monitoring play a critical role in ensuring that housing projects meet specified quality standards and requirements. Marco et al. (2021) quality control involves implementing processes and procedures to detect and address quality issues promptly. Monitoring mechanisms, such as regular inspections and performance evaluations, help project teams identify deviations from quality standards and take corrective actions.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Description of Study Area

In 1886, Emperor Menilik II and Empress Taitu designated AA as the capital of Ethiopia, making it an important for today's East African city(Alemayehu, 2008). AA, Africa's diplomatic capital, is home to a number of global administrations, including the headquarters of the AU and the UNECA (Tadesse et al., 2023). Moreover, it is geographically situated at 9°2'N latitude and 38°45'E longitude, in the middle of the country. Its average elevation is 2,400 meters above sea level, with Entoto Hill to the north having the maximum elevations of 3,200 meters. See Figure 3.1. Addis Ababa stands out as a high-altitude capital city among the various cities around the world. (Gezahegn et al., 2022). The site is a rapidly developing neighborhood with modern amenities, including shopping centers, restaurants, schools, and hospitals. The area known for its clean and well-maintained streets, as well as its proximity to the Addis Ababa Bole International Airport.



3.2. Study Design and Approach

This study utilized both descriptive and explanatory research methods to achieve the research objectives. Qualitative data was preferred for its ability to analyze, tabulate frequency and percentage, determine correlation, and describe context. The study employed a mixed research approach, incorporating both qualitative and quantitative methods.

Violante & Vezzetti, (2017), the integration of qualitative and quantitative approaches has the potential to mitigate the weaknesses of each method by leveraging the strengths of the other. The study employed descriptive research methods, as they facilitate the tabulation, analysis, and description of the context. The study generated ideas through a review of relevant literature, and data collection involved structured questionnaires, observations, in-depth interviews, and face-to-face discussions to assess knowledge and practices. To elucidate the collected data, visual aids such as graphs and charts utilized to enhance reader comprehension. Subsequently, the data analyzed using Microsoft Excel, and SPSS. See the study frame in Figure 3.2.

3.3. Data Type and Source

In pursuit of the research objectives, a combination of primary and secondary data was utilized. Quantitative and qualitative data gathered from diverse sources to address the research questions effectively. The primary data sources involved professionals within the contractor, consultant and client side at project and organizational levels. Data collection methods included questionnaires, in-depth interviews, desk studies, and observations. Additionally, secondary data from various sources such as books, journal articles, and organizational documents reviewed and analyzed to augment the study's findings. This comprehensive approach ensured a robust foundation for the research, drawing upon a wide array of information to achieve the desired outcomes. Data gathered from primary source should be further substantiate and triangulate by secondary data sources (Shtayat et al., 2020).

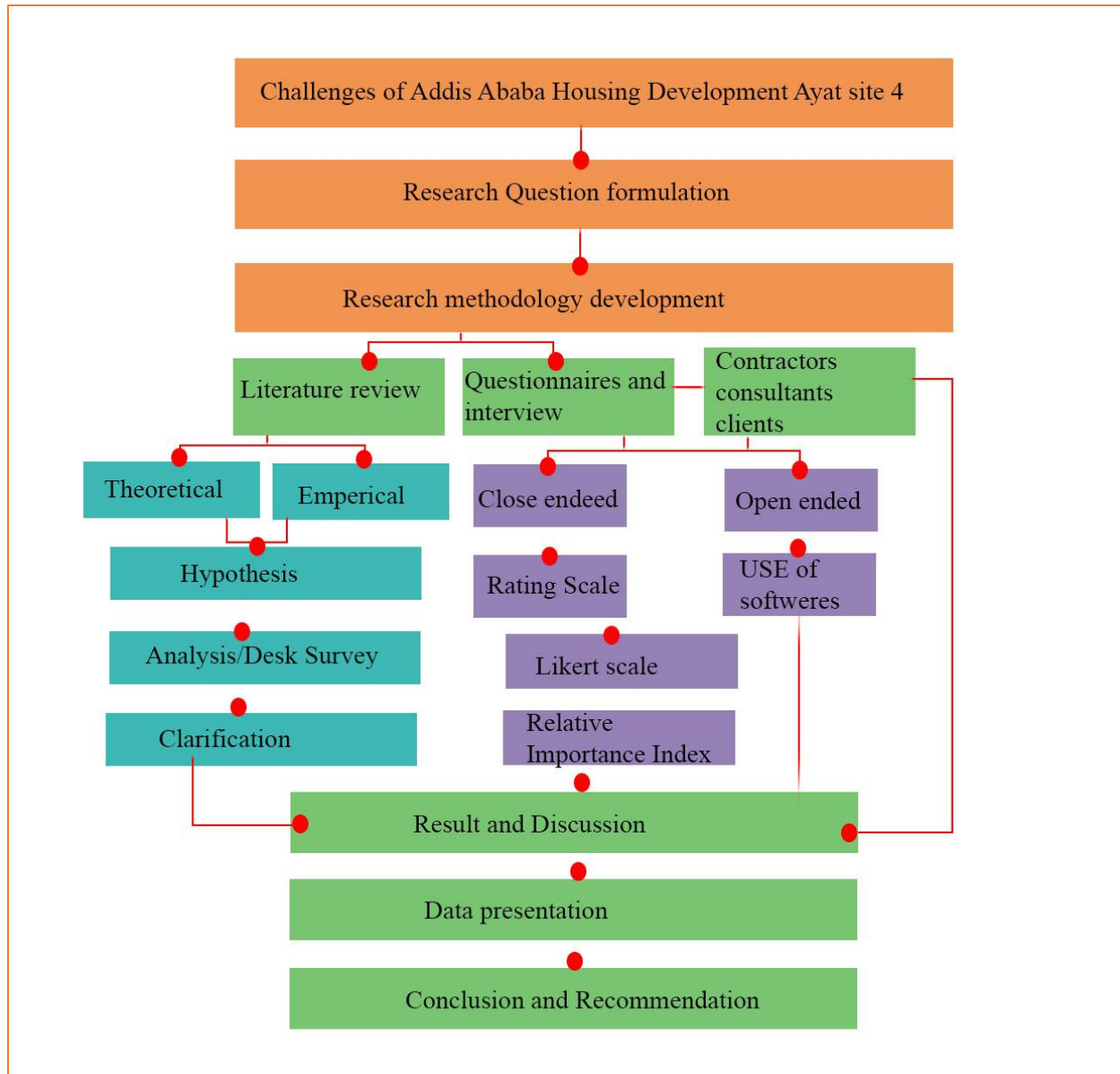


Figure 3. 2: Research framework

In the research framework depicted in Figure 3.2, the literature review encompassed both theoretical and empirical perspectives. Questionnaires were distributed to contractors, consultants, and clients, containing a mix of closed and open-ended questions. By integrating theoretical insights with survey data through desk analysis, the study derived its findings and conclusions.

3.4. Study variables

3.4.1. Dependent variables

A dependent variable is a variable in a study or experiment that is being measured, observed, or tested (Ledford et al., 2018). The outcome or response studied and influenced by changes in the independent variable. The dependent variable is the variable that researchers are interested in understanding or predicting based on the manipulation of the independent variable(s). In other words, the dependent variable "depends" on the independent variable(s) for its value or outcome. Therefore, Performance of the AAHDC is dependent variable.

3.4.2. Independent variables

An independent variable is a variable in a study or experiment that manipulated, controlled, or changed by the researcher. It is the variable that hypothesized to have an effect on the dependent variable(s). The independent variable is the variable that tested to see how it influences or affects the dependent variable(s). Changes in the independent variable(s) believed to cause changes in the dependent variable(s), and researchers manipulate the independent variable(s) to observe the resulting effects on the dependent variable(s) (Ledford et al., 2018). Therefore, project management practices, material quality, work methodology, transparency, community engagement, project planning, project delay, project budget, professionals, environmental conditions are independent variables of the study.

3.5. Population and sample size

Bole Ayat site four 40/60 project was the population of this study. Professionals representing Contractors, Consultants, and Clients currently involved in the 40/60 houses project at Ayat Project site 4 constitute the research target respondents. The sample size determined using the statistical formula provided below, considering the population size and confidence level, to estimate the number of questionnaires to be distributed to respondents, while also factoring in the response rate.

The sample size is determined using Yamane, (1967) formula.

$$n = \frac{N}{1 + Ne^2} \quad \text{Equation 3.1}$$

Where:

n = Desired sample size

N = Total population

e = (the accepted error limit of value 0.05) with 95% confidence level.

3.6. Sampling Method

In this research, a method called stratified sampling was used to select participants from different groups such as clients, contractors, and consultants. This approach was chosen to ensure that the survey responses accurately represented the views and experiences of all relevant stakeholders(Liu et al., 2007).

Contractors involved on the project participated on the data collection were TNT construction, ETETE construction, YESHI construction, CHALA construction, BOKRA construction, FE construction, FERESMAY construction, NIGUSE construction, TICKS construction, SMEs(client assigned small enterprise). Consultants (Habatamu international consultant current name ASPIRE consulting), AAHDPC professionals, and project site engineers.

Both probability and non-probability sampling techniques were used in selecting participants from the target population based on the stratified method.

The target population is homogeneous behavior so that from the Probability sampling method simple random sampling technique used on the selection of contractors, SMEs, consultants, and end users or residents. In order to identify the respondent's view on the topic of this study, Likert scale was used with a scale ordinal measure of (From 1-5). That is (Very high influence =5, High influence = 4, Medium influence = 3, Low influence = 2 and Very low influence =1) influence or challenges among the factors. In addition, on the other hands (strongly agree = 5, agree = 4, neutral =3, disagree = 2 and strongly disagree = 1).

By utilizing Equation 3.1 and considering the total population of 100, 80 target respondents selected, and the questionnaire was distributed.

3.7. Data collection

3.7.1. Data collection tools

The survey method was chosen by the researcher because of its popularity as a means of gathering much data in cost-effective way (M et al., 2017). Therefore, semi-structured interview and questionnaires administrated as survey instruments to the project manager of owners, project managers of consultants and contractors, and internal team workers. The main tools used to gather the primary data from the primary sources mainly include questionnaire, interview guides and experiences of the researcher. Regarding the questionnaire, primary data's were collected using self-administered semi-structured questionnaire composed of close-ended and open-ended questions.

3.7.2. Procedures of data collection

To gather pertinent data for the study, the mentioned instruments were used. The researcher opted for these methods for their cost and time efficiency, uniform data analysis, reduced biases, and the use of interviews as a backup for potential questionnaire misunderstandings by respondents. Questionnaires have been prepared considering challenges/factors affecting and who is responsible for which challenge. The first phase of data collection was the establishment of the study framework, which includes the survey and secondary data. The survey framework includes the identification of all relevant documentation and formulation of questions for the interviews and questioners.

3.8. Data Analysis

The questionnaires distributed to the respondents in alignment with the literature review outlined in chapter two. A kind of questionnaires utilized a five-point Likert scale (1-5), prompting respondents to indicate their level of agreement or disagreement with a given statement.

The Likert scale demonstrated to be a valuable tool for determining whether respondents hold a positive or negative attitude towards an object or statement, making it well suited for this research study. Following the collection of data using the survey instruments mentioned above, both qualitative and quantitative methods of data analysis employed. The data gathered from the questionnaire responses used to evaluate the challenges faced by the responsive body and future project management aspects, aligning with the research objectives, utilizing IBM SPSS 27. For the

analysis, a combination of descriptive and explanatory statistical methods employed. The findings presented using graphs, charts, frequency distributions, rankings, tables, and figures. The Relative Importance Index method (RII) utilized to assess and rank the challenges, as well as to identify the responsive body by using Microsoft Excel and IBM SPSS 27 according to Equation 3.2.

$$RII = \sum \frac{W}{A * N} \quad \text{Equation 3.2}$$

Where

RII= Relative importance index

W is the weight given to each factor by the respondents and ranges from 1 to 5,

A=the highest weight which is 5 and

N= the total number of respondents.

Thus

$$W = \sum [(f1 * n1) + (f2 * n2) + (f3 * n3) + \dots + (fn * nn)] \quad \text{Equation 3.3}$$

Where

fn = score ranking and

nn=corresponding number of responses.

3.9. Data measurement

Understanding the level of measurement is crucial in choosing an appropriate data analysis method. Different measurement levels require specific methods for effective analysis. In this study, ordinal scales were utilized, which involve rating data collected to describe or indicate the severity of the stated problem.

The Table display ordinal scales that represent rating data typically collected to describe or indicate the absolute measures of the stated problem.

Two types of ordinal rating scales were utilized, namely "Agree Family" and "Influencing," with ratings ranging from 1 to 5.

Table 3. 1: Data measuring scales

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5
Very low influence	Low influence	Medium	High influence	Very high influence
1	2	3	4	5

3.10. Data Quality assurance

In order to ensure accuracy and mindfulness during the data collection process, it is crucial to adhere to strict data collection methods. Furthermore, the data must be organized, legible, and maintained with confidentiality in accordance with the ethical guidelines set forth by Jimma University.

3.11. Validity and Reliability of Instruments

3.11.1. Validity of Questionnaires Data

Prior to distributing the final questionnaires to the respondents, the researcher ensured the validity of the developed questionnaires. They sought feedback from friends, project personnel, and the advisor, and conducted a pilot test to validate the questionnaire. The final version of the questionnaires distributed after incorporating feedback and comments received from various professionals.

3.11.2. Reliability of data

The study's reliability or internal consistency assessed using Cronbach's alpha method. Cronbach's alpha is a statistical measure used to assess the internal consistency or reliability of a set of items in a questionnaire or survey. It calculates the extent to which all the items in the questionnaire are measuring the same underlying construct or concept. A high Cronbach's alpha value (typically above 0.70) indicates that the items are closely related and consistent in measuring the intended construct (Hajjar, 2018). Hence, the reliability evaluated through data analysis using SPSS and Equation 3.4.

$$\alpha = \frac{k}{(k-1)} \left(1 - \frac{\sum_i \sigma_{yi}^2}{\sigma_x^2} \right) \quad \text{Equation 3.4}$$

Where

K= the number of scale items

σ_{yi}^2 = variance associated with item i

σ_{xi}^2 = variance associated with the observed total score

Table 3. 2: Reliability test

Cronbach's Alpha (α)	N of Items (K)
0.749	68

On Table 3.4, the computed reliability test result of 0.749 indicates a high level of internal consistency among the questionnaires or survey. As such, the Cronbach's alpha value of 74.9% exceeds the acceptable threshold, demonstrating reliability for data analysis.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1. Overview of the Questioners

In the survey, 48 male participants and 18 female participants, all aged 25 and above, took part. The respondents represented a range of educational backgrounds from vocational training to PhD level. Moreover, the participants had varying levels of work experience, spanning from less than 5 years to over 10 years.

Table 4. 1: Respondents information

No	Background information		Frequency	Percentage
1	Sex	Male	48	72.70%
		Female	18	27.30%
		Total	66	100.0%
2	Age	25-30	12	18.18%
		31-40	15	22.73%
		41-50	25	37.88%
		above 51	14	21.21%
		Total	66	100.0%
3	Education level	Vocational training	6	9.1%
		Diploma	6	9.1%
		First degree	23	34.8%
		Master's degree	25	37.9%
		PhD	6	9.1%
		Total	66	100.0%
4	Work Experi- ence	<5 years	10	15.2%
		5-10 years	19	28.8%
		>10year	37	56.1%
		Total	66	100.0%
5	Employment type of respond- ent	Client side	12	18.2%
		Contractor/subcontractor side	25	37.9%
		Consultant side	22	33.3%
		Administrative side/ AAHDC	7	10.6%
		Total	66	100.0%

Total sample of 80 questionnaires distributed to various respondents of interest for the study. However, 66 respondents replied from four groups. 30, 25, 15, and 10 questionnaires distributed to contractors/subcontractors, consultants, clients, and AAHDC respectively and the collected responses were 25, 22, 12, and 7 respectively.

Alpha value above 0.7 considered acceptable for research purposes, indicating that the items in the scale are measuring a similar construct consistently. However, higher values (closer to 1) indicate better internal consistency reliability. See on Table 4.2 distributed and collected questioners.

Table 4. 2: Parties participated in questioner and collected data

No .	Parties involved	Distributed Questioners	Collected Questioners	Percent from Distribution	Percent from Total
1	Contractor/subcontractor	30	25	83.0%	31.25%
2	Consultant	25	22	88.0%	27.5%
3	Client	15	12	80.0%	15.0%
4	AAHDC	10	7	70.0%	8.75%
	Total	80	66	80.25%	82.5%

Source: Survey data

4.2. Background Information of the Respondents

4.2.1. Gender

It was evident that males were the predominant gender in the building construction site.

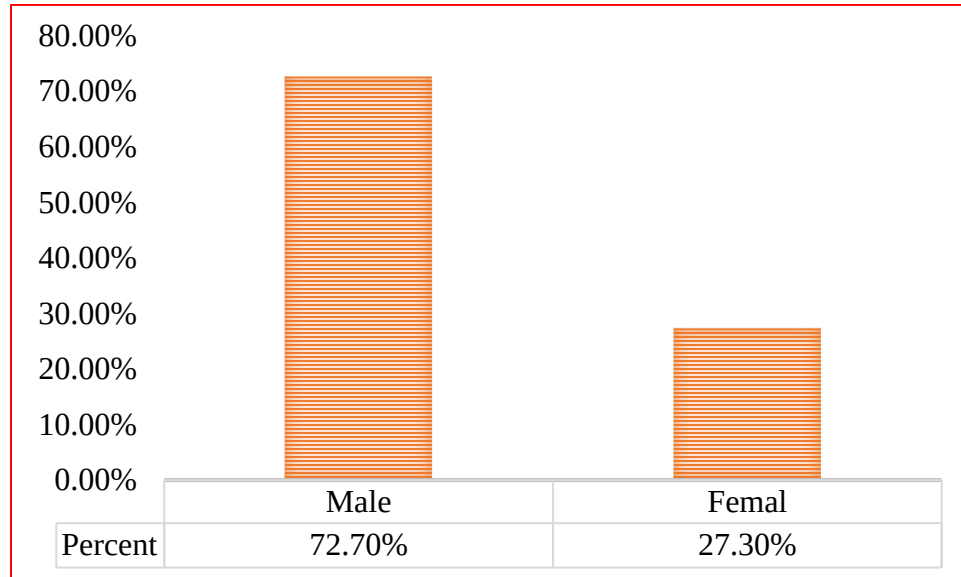


Figure 4. 1: Gender of the respondents

As indicated in Figure 4.1, 72.7% of the respondents were male, while 27.3% were female. Although the survey exhibited a male-dominant distribution, this gender imbalance did not influence the findings of the research.

4.2.2. Age

The age distribution within a research study holds significant importance as it plays a crucial role in obtaining accurate and reliable results. By identifying and categorizing participants into different age groups based on the nature of the research, researchers can ensure that they receive precise and relevant responses from each group. All participants included in this survey were aged 25 years and above, thereby ensuring that the information gathered from them considered valid and relevant for the study.

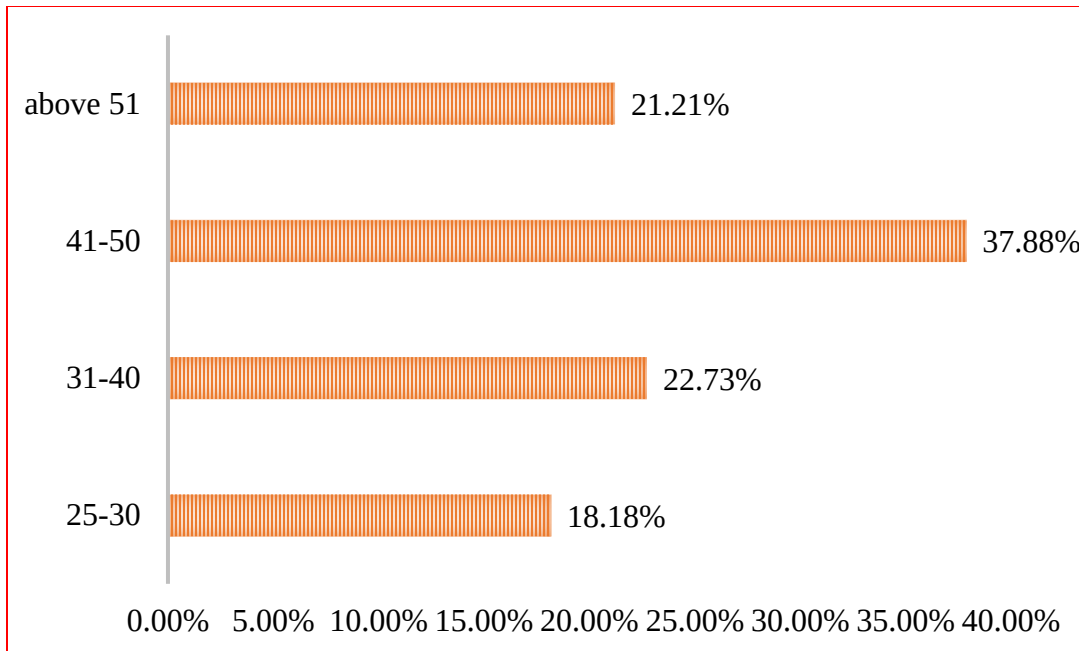


Figure 4. 2: Age of the respondents

As depicted in Figure 4.2, respondents aged 41-50 accounted for 37.88% of the total sample, suggesting a level of maturity among these respondents when responding to the posed questions. The age group with the lowest representation in this survey was 25-30, comprising 18.18% of the total sample.

4.2.3. Education Level

Different levels of education can influence how individuals perceive and interpret information. By including participants with varying educational backgrounds, researchers can gain a broader understanding of the topic under investigation. Respondents from a spectrum of educational backgrounds, ranging from vocational studies to doctoral level, were included in this study.

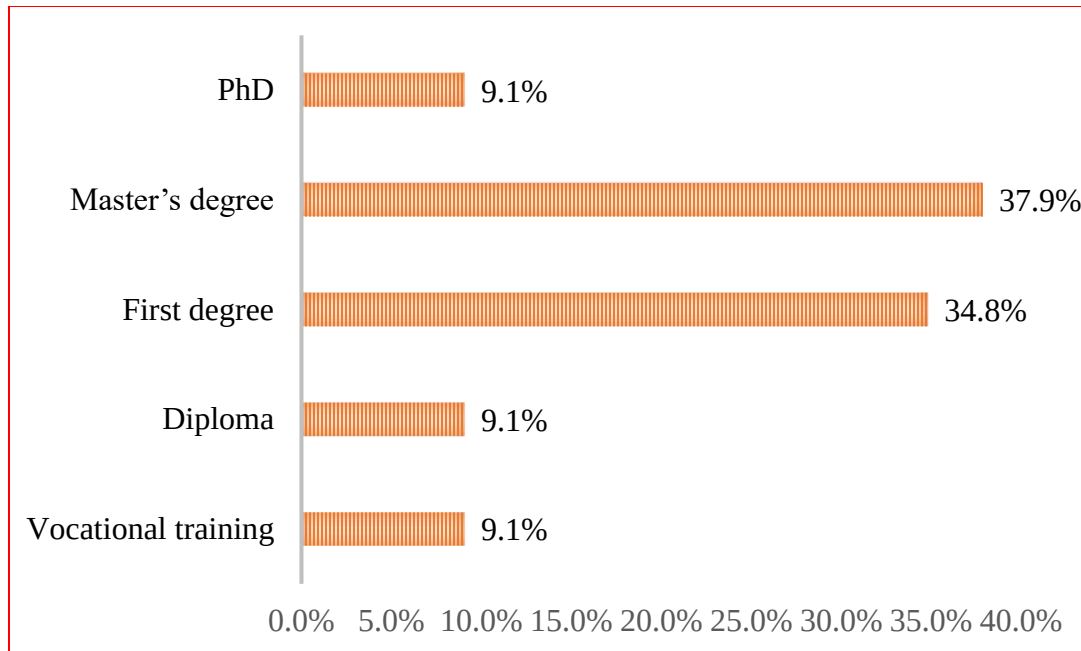


Figure 4. 3: Education level of the respondents

Figure 4.3, graph distribution suggests a highly educated group, especially notable were the high percentages of Master's and First degrees 37.9% and 34.8% respectively. Each of the following categories - vocational education, diploma holders, and PhD holders - comprised 9.1% of the total respondents. Educational diversity indicates a broad spectrum of perspectives and expertise that can enrich the research findings. The high percentages of Master's and First-degree holders (37.9% and 34.8% respectively) suggest that the survey sample comprises individuals with advanced knowledge and skills in their respective fields. This could potentially lead to more insightful and nuanced responses to the survey questions. The educational qualifications of the participants add credibility to the survey results. Higher education levels often correlate with critical thinking skills, analytical abilities, and a deeper understanding of the subject matter, enhancing the quality and reliability of the data obtained.

4.2.4. Work Experience

Work experience can significantly influence an individual's perspectives, attitudes, and decision-making processes. By analyzing the distribution of work experience levels, researchers can gain insights into how various professional backgrounds may shape responses to survey questions (Tesluk & Jacobs, 1998).

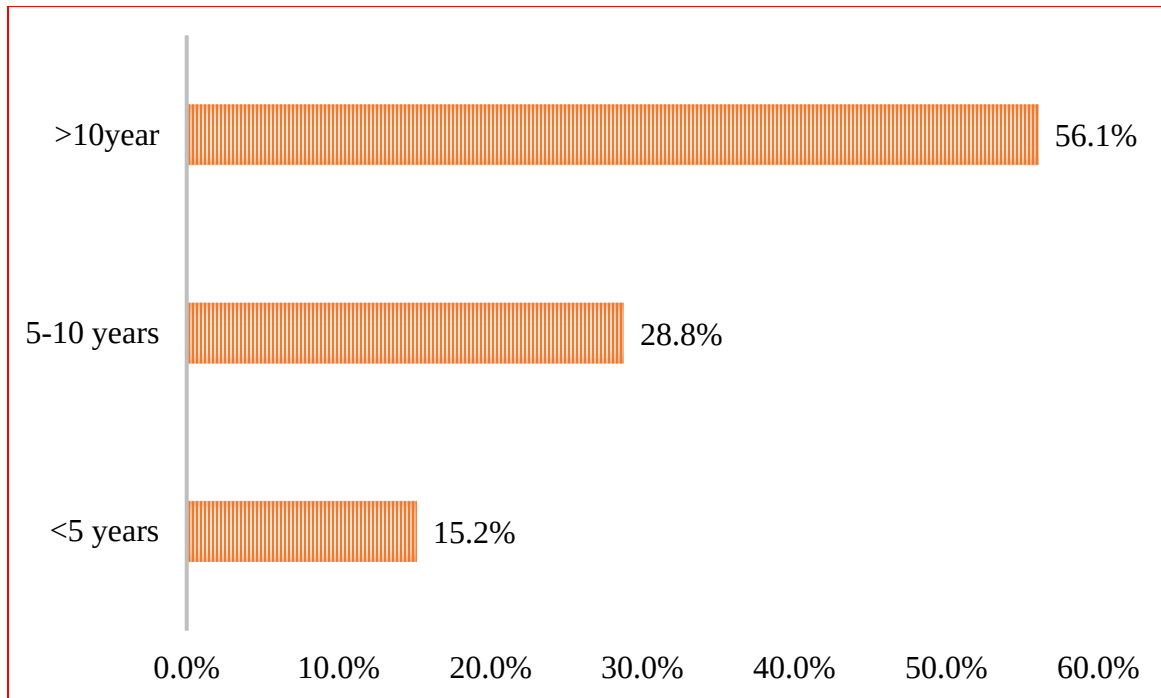


Figure 4. 4: Work experience of the respondents

The longest bar represents the time span "more than 10 years," which constitutes 56.1% of the total. This indicates that more than half of the data or subjects fall within this experience group. See Figure 4.4. Overall, the graph suggests a distribution where the majority of cases or instances discussed had a duration or existence of over 10 years, with decreasing proportions for 5-10 years and less than 5 years (56.1%, 28.8% and 15.2%) respectively.

Therefore, the distribution of work experience in this survey is important to understand prevailing trends within the industry or sector. That they had significant experience, suggested a mature and well-established sector with a strong workforce. It helps to validate the findings by demonstrating that the study represents a wide range of experience levels. This increases the generalizability of research conclusions to a broader population.

4.2.5. Employment career

In order to achieve the posed research question the study conducted among the following career parties. Since the main actors involved in the project were, contractors/subcontractors, consultants, clients and Administrative/AAHDC office. As depicted in Figure 4.5, 37.9% of the survey participants sourced from the contractor/subcontractor segment. This selection aligns with the

methodology outlined in Chapter 3, wherein a stratified random sampling approach adopted. The contractors/subcontractors, identified as primary stakeholders, represent the initial tier of involvement in the 40/60 housing construction project at Bole Ayat site 4.

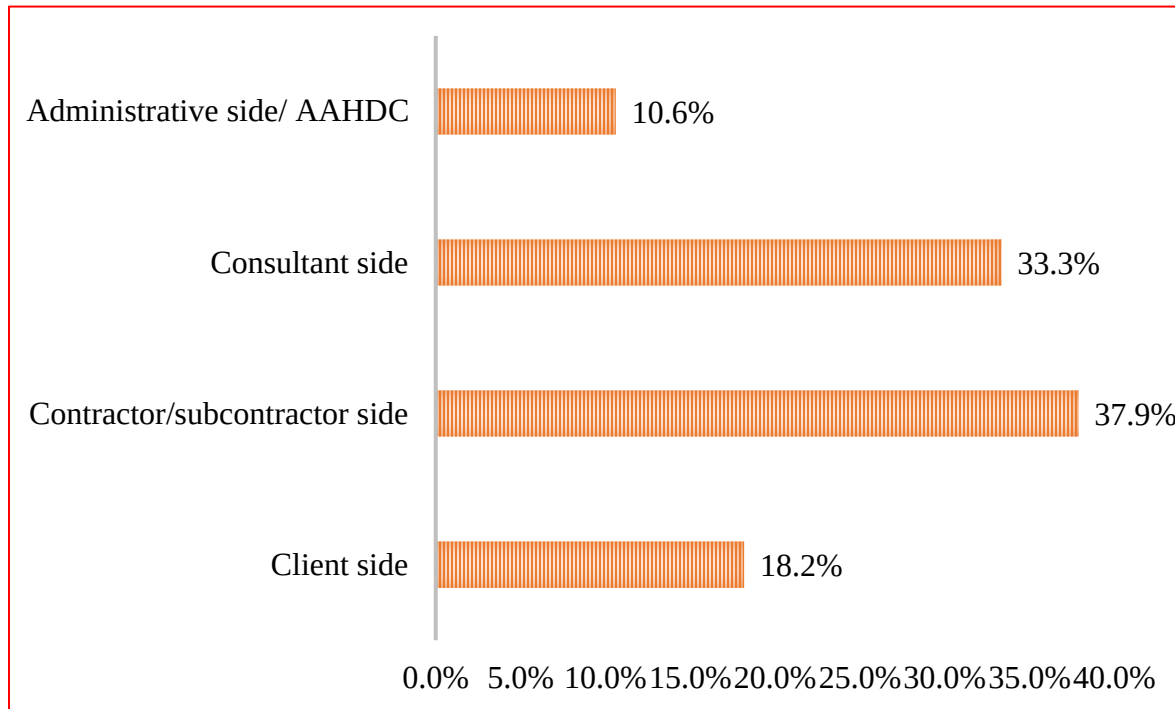


Figure 4. 5: Employment career of the respondents

Summarizing the graph on Figure 4.5, overall distribution implies that the Contractor/subcontractor side and the Consultant side were the primary stakeholders or contributors in the project or study, while the Client side and the Administrative side/AAHDC have comparatively lesser involvement. This helps in understanding the key players involved in the project or study. Identifying the primary contributors and stakeholders indicates who has the most significant impact on the project's outcomes.

4.2.6. Respondents Department

Including various department groups ensures a comprehensive representation of perspectives, experiences, and expertise within an organization. This diversity can lead to a more holistic understanding of the research topic or issue at hand.

Described on Figure 4.6, Project Management Department received a rating of 12.1%, which indicates a moderate level of feedback or satisfaction among other higher and lower ratings.

Procurement Department scored 15.2%. This suggests that a significant portion of the survey inputs directed toward procurement, indicating its crucial role or performance in the organization. Health and Safety Department with a noticeably low score of 3.0%, this department has the least responses, indicating potentially less focus or lower issues/concerns raised relative to other areas. This could imply satisfaction but might also suggest areas of oversight or lower visibility within the organization.

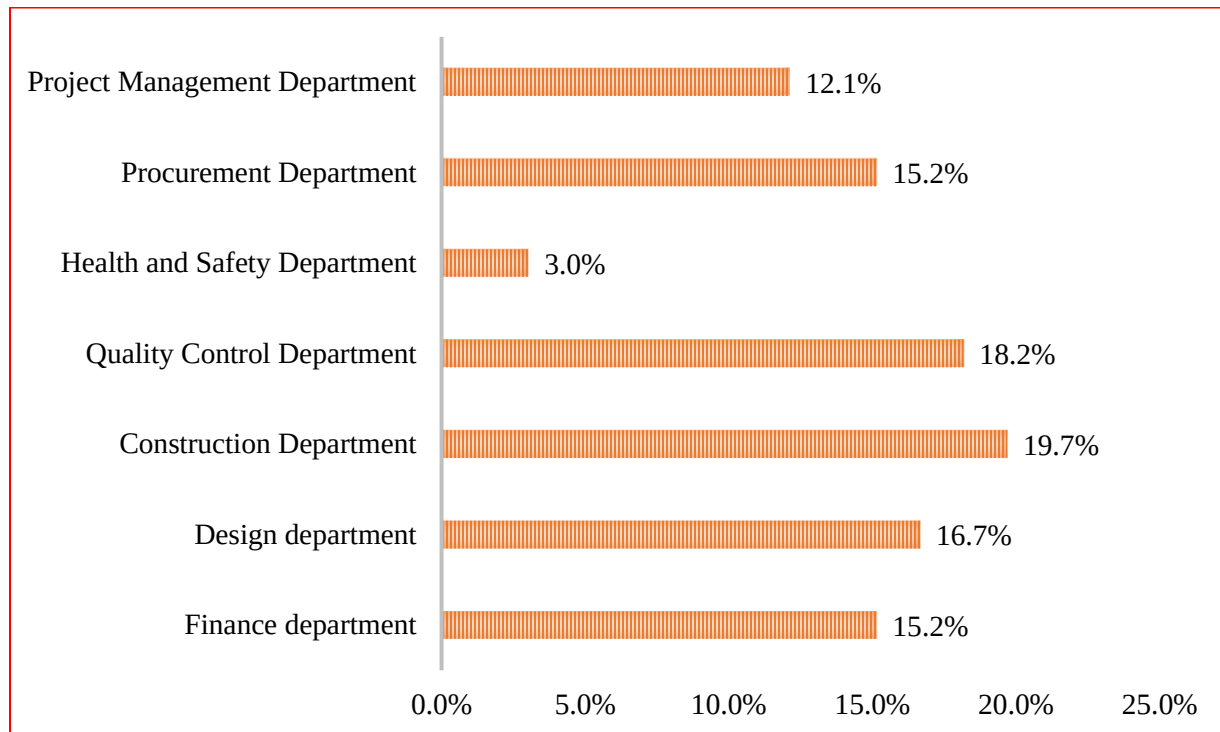


Figure 4. 6: Respondent's Department

Construction department rated at 19.7%, and this was the first highest and suggests major interaction or attention in the survey, possibly highlighting the emphasis or the critical nature of construction activities within the organization. Quality control department the second highest score of 18.2% suggests strong engagement or significant feedback regarding quality control, which might be due to its importance in the operational success of the organization, or visibility of its impact. Design department received a score of 16.7%, indicating a high level of importance or issues that addressed or commented upon, highlighting its vital role in the organizational processes. Finance department similar to the procurement department, the finance department also scored 15.2%, which underscores its critical role in managing organizational resources and could reflect

significant feedback relating to financial operations. All attempt in survey, the finding result had reality related for the project of it increases the prove of the result.

4.3. Current Practice of the Project

From literature and work experience, it was obviously know for the several practices related to the project performance. To confirm this they study conducted survey from all parties the level agreement on the following points. The survey question says, “Do you agree that the practice of (40/60) Addis Ababa housing construction Bole Ayat Site 4 project was”...? Moreover, the answers presented on Table 4.3.

(5 = strongly agree, 4 = agree, 3 = Neutral, 2 = dis agree and 1 = strongly dis agree)

Table 4. 3: Major practices of (40/60) Bole Ayat Site 4 project

Current practice of the project/Fac-tors	Valid	1	2	3	4	5
Delay in project completion	66	17%	0%	0%	33%	50%
Quality of construction	66	0%	0%	21%	55%	24%
Affordability and accessibility	66	0%	0%	14%	47%	39%
Lack of transparency	66	0%	9%	27%	30%	33%
Infrastructure and amenities	66	21%	33%	30%	15%	0%
Community engagement	66	0%	11%	8%	53%	29%
Sustainability practices	66	11%	26%	29%	24%	11%
Land tenure and property rights issues	66	30%	50%	17%	3%	0%
Social inclusion and diversity	66	11%	5%	8%	59%	18%
Regulatory compliance	66	0%	44%	11%	0%	45%

Source: Survey data

The survey result on Table 4.3 show that the most significant concerns among the 66 respondents regarding project drawbacks include delays in project completion 50% strongly agree and 33% agree. That concludes 83% of respondents either agreeing or strongly agreeing project delay. Various factors, including project, client, contractor, consultant, and external issues, collectively

contribute to delays in project completion. Problems such as discrepancies in contract documents, suspension of work, inadequate funding, and insufficient resources like labor and materials affect project timelines (Solomon, 2022). Issues like poor project management, lack of experience, and delays in approvals further hinder progress. Addressing these challenges, including better planning, effective management, and improved communication, is crucial to reducing delays and ensuring timely project completion.

About the quality of the project 55% agree that one of the drawback of 40/60 Bole Ayat site project 4 and 24% strongly agree. That means 79% of total respondent agree or strongly agree on the project quality. Infrastructure and amenities had mixed responses, indicating varying levels of dissatisfaction among participants. Social factors such as community engagement, social inclusion/diversity, and sustainability practices also highlighted, with a majority of respondents expressing agreement on the importance of these elements. Regulatory compliance was another area of concern; with a significant number of respondents (89%) either disagreeing or strongly disagreeing with the project's adherence to regulations.

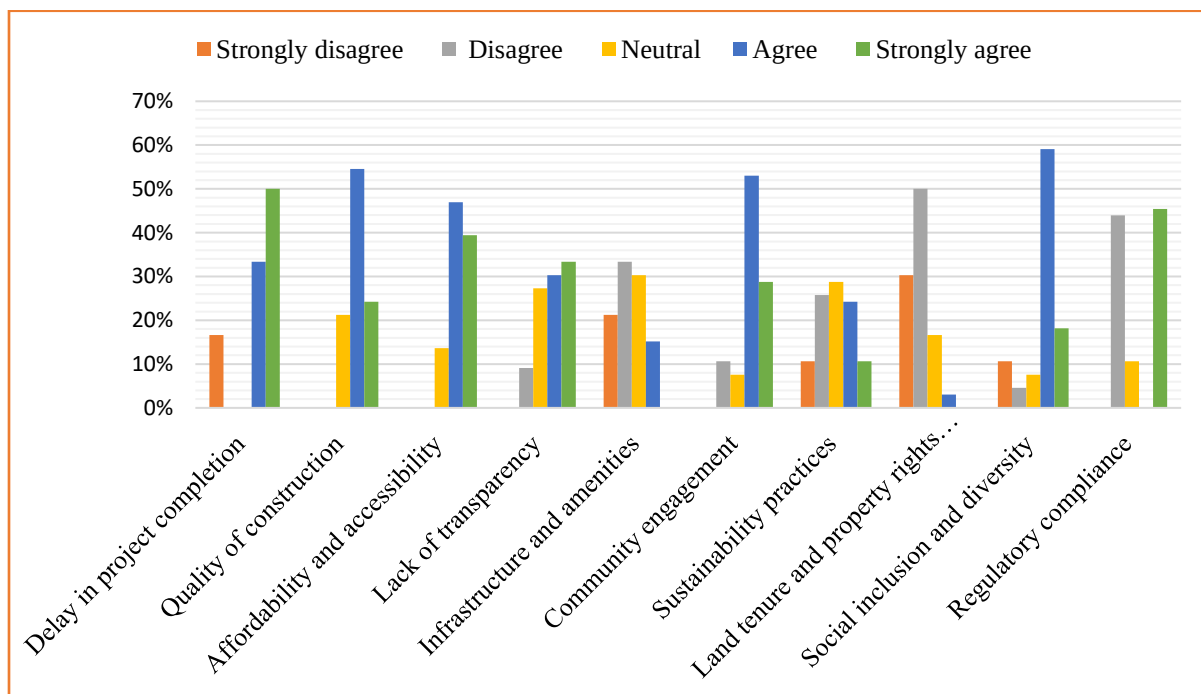


Figure 4. 7: Graph of current practice of Bole Ayat site 4 project

Source: Survey Analysis

On Figure 4.7 their level of agreement presented with color and top of color agreement percent written. Thus, quality, community engagement, affordability, and social inclusion were majority of the respondents agreed practice of the project. Whereas, delay 50% of the respondents strongly agreed drawbacks or challenges of the project. Effective project management practices, risk assessment, and proactive communication can help mitigate delays and minimize their impact. Overall, these findings underscore the multifaceted nature of project practices and the importance of addressing various factors to enhance overall project quality and stakeholder satisfaction. The finding of current practice seen on the project were, project delay, quality issue, affordability, weak community engagement in the project and lack of transparency. It is important for project managers to address delays promptly, assess the reasons behind them, and work towards finding solutions to keep the project on track. Using this data and analyzing which factor has higher degree by using RII method, the result was according to Table 4.4.

Table 4. 4: Resultant Important Index (RII) method ranking

Current practice of the project/Factors	Valid	1	2	3	4	5	(W)	A*N	RII	Rank
Delay in project completion	66	11	0	0	22	33	264	330	0.8000	3
Quality of construction	66	0	0	14	36	16	266	330	0.8061	2
Affordability and accessibility	66	0	0	9	31	26	281	330	0.8515	1
Lack of transparency	66	0	6	18	20	22	256	330	0.7758	5
Infrastructure and amenities	66	14	22	20	10	0	158	330	0.4788	9
Community engagement	66	0	7	5	35	19	264	330	0.8000	3
Sustainability practices	66	7	17	19	16	7	197	330	0.5970	8
Land tenure and property rights issues	66	20	33	11	2	0	127	330	0.3848	10
Social inclusion and diversity	66	7	3	5	39	12	244	330	0.7394	6
Regulatory compliance	66	0	29	7	0	30	229	330	0.6939	7

Source: Survey analysis

On Table 4.4, strongly disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, strongly agree = 5

TR for Total Respondents and (W) is the summation of each based on Equation 3.3.

A= highest number which is five in rating scale and N is number of respondents (population) which was 66. The RII value has a range from 0 to 1 (0 not inclusive) and has been categorized into five levels of importance as shown on Table 4.5.

Table 4. 5: Relative Importance Index values

RII Value	Importance Level
From 0.8-1	High
From 0.6 – 0.8	High medium
From 0.4 - 0.6	Medium
From 0.2 – 0.4	Medium low
From 0 – 0.2	Low

Source: Tarek et al. (2022)

Based on the findings of Table 4.3, it was determined that factors labeled as "medium low" and "low" were not significant drawbacks. As a result, issues related to land tenure and infrastructure/amenities were identified to have a lower impact as affecting factors. See Figure 4.8 for detail.



Figure 4. 8: RII of the current practice

Source: Survey Analysis

As presented on Figure 4.8, among the identified drawbacks/current practice of the project, affordability and accessibility ranked first in terms of importance, while the quality of construction came in second. The delay in project completion and community engagement were both ranked third in terms of their contribution to the overall analysis.

The statement suggests that, based on Charitonidou's research conducted in 2022, the issue of affordability in the housing market in Addis Ababa may not be the most pressing or significant challenge at the present time. This could mean that other factors or challenges within the housing sector have become more prominent or urgent. As a result, the research findings emphasize the importance of affordability as a key factor to consider in the analysis, even though it may not be the most recent or critical challenge in the context of housing issues in Addis Ababa. In Haile's (2019) study on housing project delays in Addis Ababa, the author delves into the various factors that contribute to the slowing down of construction projects in the city. From the contractor's perspective, issues such as shortage of materials, labor disputes, and poor project management highlighted as key contributing factors to delays. Consultants, on the other hand, burdened by bureaucratic red tape, communication breakdowns, and insufficient supervision of construction activities (Haile, 2019). Clients, too, play a role in delaying projects through late payments, design changes, and unrealistic expectations.

Table 4. 6: Factors Pearson Correlation

Correlations						
		Delay in project completion	Quality of construction	Lack of transparency	Community engagement	Social inclusion and diversity
Delay in project completion	Pearson Correlation					
Quality of construction	Pearson Correlation	-0.141				
Lack of transparency	Pearson Correlation	0.014	-0.063			
Community engagement	Pearson Correlation	-0.046	0.482	0.332		
Social inclusion & diversity	Pearson Correlation	0.372	-0.409	-0.171	-0.375	

Source: Survey Analysis using SPSS

The Table 4.6 shows the correlation coefficients (Pearson Correlation) between different variables in a research study. According to Schober et al. (2018), the correlation coefficient ranges from - 1 to 1. A value of 1 indicates a perfect positive correlation, a value of -1 indicates a perfect negative correlation, and a value of 0 indicates no correlation (Schober et al., 2018).

The research findings indicate that there is a weak negative correlation between project completion delays and the quality of construction. This suggests that as project completion delays increase, the quality of construction tends to decrease slightly. Additionally, there is a moderate positive correlation between the quality of construction and community engagement, implying that higher quality construction projects are more likely to have better community engagement.

On the other hand, the lack of transparency shows weak correlation with other variables, and the variables "Social inclusion and diversity" shows both moderate positive and negative correlations with other variables. This suggests that there might be complex relationships between social inclusion and diversity in project outcomes.

In conclusion, the findings from the survey indicate that project delays, quality issues, affordability, weak community engagement, and lack of transparency were the current practice of the project. Factors such as project management, experience, approvals, and communication play crucial roles in addressing these challenges and ensuring the project performance.

Using the Resultant Important Index (RII) method, it was determined that affordability and accessibility ranked highest in terms of importance, followed by the quality of construction. The delay in project completion and community engagement were also identified as significant trends contributing to the overall analysis.

Furthermore, the correlation analysis revealed interesting insights, such as a weak negative correlation between project completion delays and the quality of construction, as well as a moderate positive correlation between the quality of construction and community engagement. These findings underscore the importance of considering various factors like project delays, construction quality, transparency, community engagement, and social inclusion in project management and urban development.

4.4. Major Challenges on the project

The second objective of the research was to determine the challenges of the project. Questionnaires designed using a Likert scale to assess the perceived there agreement on the following challenges. The identified challenges were based on literature review. A questionnaire like “Do you agree that one of the project challenge is ...” The respondent’s agreement based on the following table. (Strongly disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, strongly agree = 5)

Table 4. 7: Challenges of the project

The challenges	1	2	3	4	5
Planning and Scheduling	0%	0%	21.2%	28.8%	50.0%
Quality Control Measures	0%	0%	27.3%	42.4%	30.3%
Training and Skill Development	0%	13.6%	12.1%	30.3%	43.9%
Resource Management	0%	0%	15.2%	48.5%	36.4%
Technology Integration	0%	0%	12.1%	47.0%	40.9%
Risk Management Strategies	0%	18.2%	36.4%	31.8%	13.6%
Community Engagement	0%	0%	24.2%	54.5%	21.2%
Regular Monitoring and Evaluation	15.2%	21.2%	34.8%	28.8%	0%
Sustainability Practices	13.6%	28.8%	42.4%	15.2%	0%
Integrated Project Management Systems	0%	0%	27.3%	31.8%	40.9%
Lean Construction Principles	12.1%	15.2%	34.8%	31.8%	6.1%
Streamlining Communication	0%	0%	37.9%	37.9%	24.2%

Source: Survey Analysis

The research findings, as demonstrated in Table 4.7, reveal that 50% of the respondents strongly agree that the project suffers from a lack of adequate planning and scheduling. Additionally, a significant challenge identified by the respondents is the need for training and skill development for both the workforce and project management personnel. Furthermore, the integration of technology within the project and its management system is also highlighted as a notable challenge.

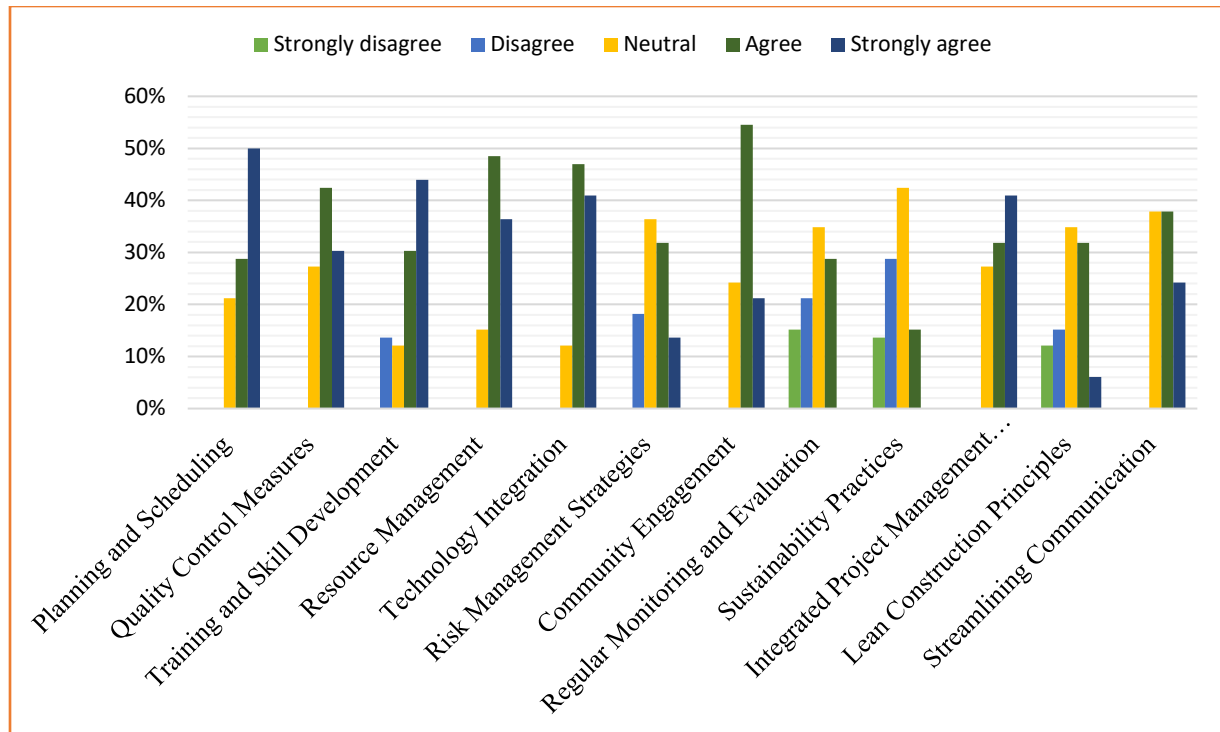


Figure 4. 9: Graph challenges on the project

Source: Survey Analysis

On the graph Figure 4.9, it was clearly seen that strongly agree series, the project planning and schedule gain 50%, but on agree series community engagement poor and graphic indicated 54.5%. Since strongly agree and agree are both positive whereas disagree and strongly disagree negative the study used to rank which challenge in first rank using RII. See Table 4.8. Therefore, from the Table 4.8, planning and scheduling and technology integration were the first challenges identified from the project. Next to them resource management, training and skilled labors another challenge of the project.

One interviewer oral mentioned, "It was the political project rather than the community and low engagement and integration."

Table 4. 8: Ranked Challenges of the project

Challenges	valid	1	2	3	4	5	W	A*N	RII	Rank
Planning and Scheduling	66	0	0	14	19	33	283	330	0.858	1
Quality Control Measures	66	0	0	18	28	20	266	330	0.806	6
Training and Skill Development	66	0	9.0	8.0	20	29	267	330	0.809	5
Resource Management	66	0	0	10	32	24	278	330	0.842	3
Technology Integration	66	0	0	8	31	27	283	330	0.858	1
Risk Management Strategies	66	0	12	24	21	9	225	330	0.682	9
Community Engagement	66	0	0	16	36	14	262	330	0.794	7
Regular Monitoring and Evaluation	66	10	14	23	19	0	183	330	0.555	11
Sustainability Practices	66	9	19	28	10	0	171	330	0.518	12
Integrated Project Management Systems	66	0	0	18	21	27	273	330	0.827	4
Lean Construction Principles	66	8	10	23	21	4	201	330	0.609	10
Streamlining Communication	66	0	0	25	25	16	255	330	0.773	8

Source: Survey Analysis

From the rankings on Table 4.8, we can see that challenges like Planning and Scheduling and Technology Integration considered the most critical based on their RII values, while challenges like Sustainability Practices and Lean Construction Principles ranked lower in importance. Concluding from the Table 4.8 and RII graph on Figure 4.9, for each challenges, appropriate strategies and resources could be allocated to effectively manage and overcome them. All the points have their own implication on the project performance. Since the RII value in between 0 and 1 values less than 0.6 were less critical and above 0.6 to 1 were high critical challenges. Thus lean approach, sustainability practice and regular monitoring had less effect on the project performance.

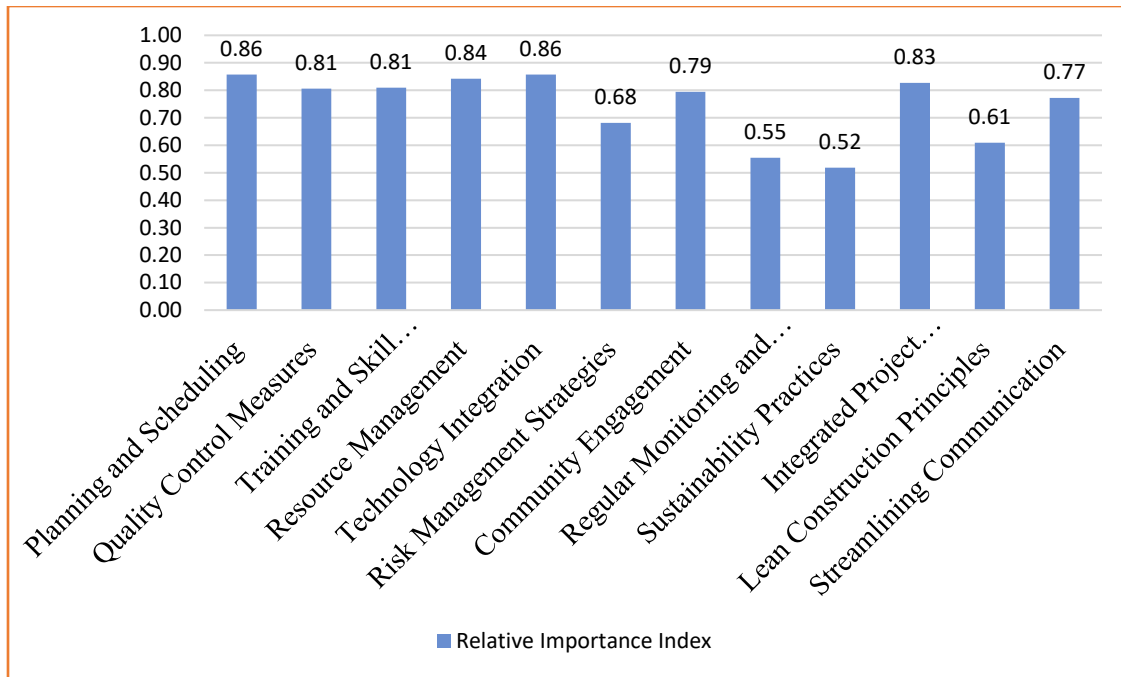


Figure 4. 10: Challenges ranked using Relative importance index (RII)

Source: Survey Analysis

These research findings provide valuable insights for project managers and organizations looking to optimize their project management practices.

In conclusion, these challenges were deemed to have a high impact on project performance. Strategies and resources could be allocated effectively to manage and overcome these challenges, ultimately leading to successful project outcomes and improved project performance. By focusing on methodologies with the highest perceived influence, such as enhanced planning and scheduling, technology integration, and resource management, organizations can enhance their project management practices and increase the likelihood of project success.

By prioritizing methodologies with the highest perceived influence, such as enhanced planning and scheduling, technology integration, and resource management, organizations can increase the likelihood of achieving successful project outcomes and driving overall project performance(Shang et al., 2023).

4.5. Accountable parties for poor performance of 40/60 Bole Ayat site Four

It was widely acknowledged that the active participation of key stakeholders, including clients,

contractors, consultants, and top administrators, plays a pivotal role in the successful performance of a project. These stakeholders bring diverse perspectives, expertise, and resources to the table, shaping the project's trajectory and outcomes significantly. Their involvement is crucial in ensuring effective communication, decision-making, and problem solving throughout the project lifecycle.

The findings of the research highlight the importance of stakeholder engagement in the context of the 40/60 housing project. Despite the identified shortcomings in stakeholder consultation, it is evident that prioritizing the involvement of clients, contractors, consultants, and top administrators can lead to improved project performance, enhanced collaboration, and better outcomes for all parties involved.

Therefore, the study conducted influence of responsiveness of the project performance as low efficiency compared to the expected outcomes. The question was based on rating scale of (Very high influence =5, High influence =4, Medium influence =3, Low influence =2, Very low influence =1).

Table 4. 9: Respondent's variance

	AAHDC	Project managers	Contractors	Suppliers	Stakeholders
Responded	66	66	66	66	66
Missing	0	0	0	0	0
Std. Devia- tion	1.092	0.806	0.976	0.669	0.615
Variance	1.193	0.650	0.953	0.448	0.379

Source: Survey Analysis

Table 4.9 provides statistical information on the involvement of different entities in a project. Standard Deviation is a measure of the amount of variation or dispersion of a set of values. A higher variance indicates that the data more spread out, while a lower variance indicates that the data more clustered together. Thus, Table 4.9, the variance was highest for AAHDC, with a value of 1.193, and lowest for stakeholders involved in the project, with a value of 0.379. This suggests that there was more variation in responses from AAHDC than from the other stakeholders. On the other hands AAHDC have the highest standard deviation of 1.092, suggesting that the number of AAHDC involved in the project varies more compared to Contractors, Suppliers, and else.

The study analyzed the teams influence on rating scale according to the following terms (Very high influence =5, High influence =4, Medium influence =3, Low influence =2, Very low influence =1). The parties were selected according to the literature and important for the project success and good performance. Their level influence analyzed according to Table 4.10.

Table 4. 10 : Accountable parties for the 40/60 housing performance

No	Accountable Stakeholders	Valid	1	2	3	4	5
1	AAHDC	66	0.0%	19.7%	25.8%	27.3%	27.3%
2	Project managers	66	0.0%	0.0%	27.3%	34.8%	37.9%
3	Contractors	66	0.0%	9.1%	9.1%	24.2%	57.6%
4	Suppliers	66	0.0%	0.0%	12.1%	48.5%	39.4%
5	Stakeholders involved in the project	66	0.0%	0.0%	34.8%	56.1%	9.1%

Source: Survey Analysis

The Table 4.10 shows the results of a survey regarding the influence of different teams on a project performance responsiveness or their influence. 66 respondents were asked to rate the influence of each team on a scale of "very low influence" to "very high influence".

The results shows AAHDC had a relatively balanced influence, with the highest percentage of respondents rating their influence as "very high influence" (27.3%) and "high influence"(27.3) or total of high influence and very high influence 54.6%.

Project managers perceived as having a significant influence, with 34.8% of respondents rating their influence as "high influence" and 37.9% rating it as "very high influence" or 72.7% very high and high influence team for the project success.

Contractors were as having a strong influence, with a majority of respondents (57.6%) rating their influence as "very high influence" 24.2% high influence. That is contractors were 81.8% high and very high influential teams for the success performance of the project.

Suppliers had a high level of influence, with 48.5% of respondents rating their influence as "high influence" and 39.4% rating it as "very high influence". Stakeholders had the highest level of influence, with a majority of respondents (56.1%) rating their influence as "high influence".

Overall, the data suggests that all of the teams surveyed have a significant influence on the project, with project managers, contractors, and stakeholders having the highest levels of influence. See the graph their level of influence percent on graph shown on Figure 4.11.

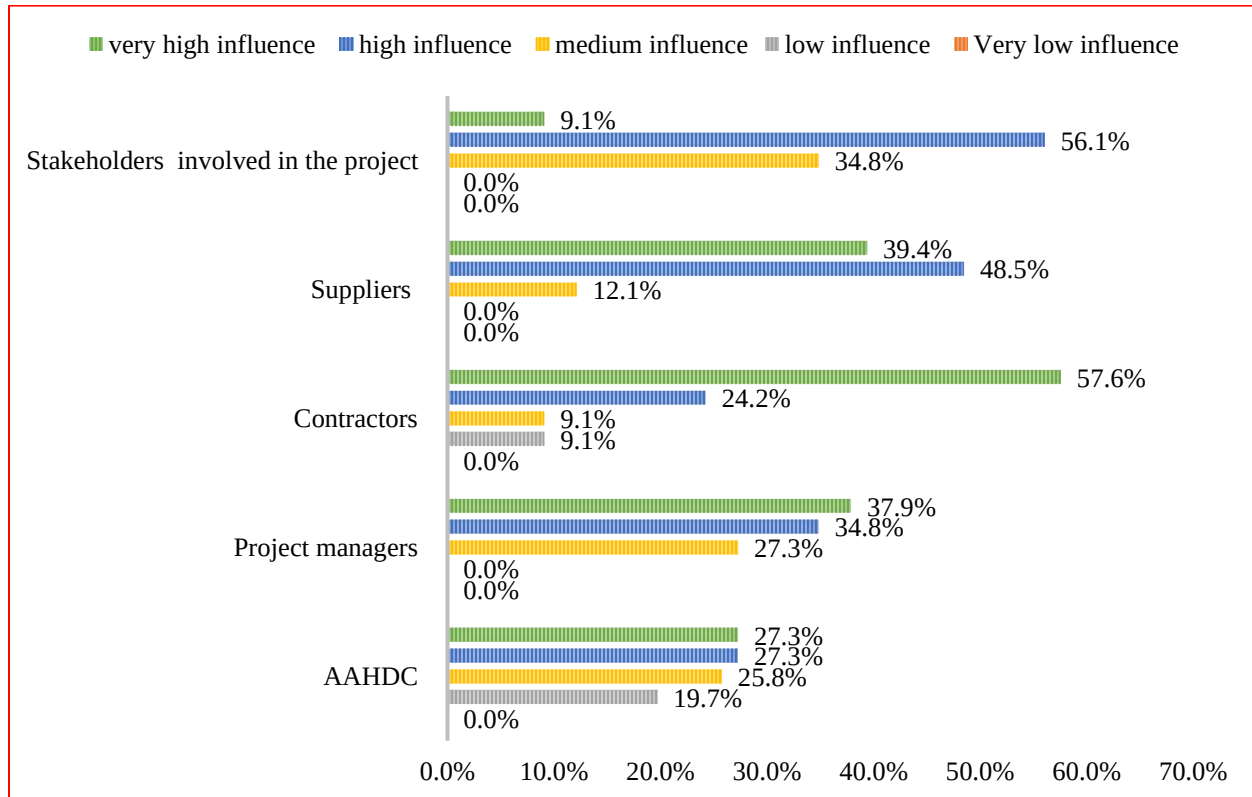


Figure 4. 11: Stakeholders influence for project performance

Source: Survey Analysis

The research findings illustrated in Figure 4.11, evident that contractors, suppliers, and project managers perceived to have the highest levels of influence for the success of the project. Specifically, 57.6% of respondents identified contractors as having very high influence, followed by suppliers at 39.4% and project managers at 37.9%. Moreover, stakeholders were also recognized for their significant impact, with 56.1% of respondents acknowledging their high influence towards project success. Similarly, suppliers were noted to have a considerable influence, with 48.5% of respondents attributing them with high influence for the success of the project. These results underscore the importance of engaging and considering the contributions of

contractors, suppliers, project managers, and stakeholders in achieving successful project outcomes.

Upon analyzing these findings, the study employed a methodology to determine the ranking of teams based on their level of influence relative to one another. By utilizing the Relative Importance Index (RII) Equation 3.2 and Equation 3.3, the results computed and presented in Table 4.11, displaying parties that emerged as the most influential compared to others in the context of the project.

Table 4. 11: RII of the accountable parties for the project performance

Acc.t Parties in 40/60 project	Valid	1	2	3	4	5	SUM (W)	A*N	RII	Rank
AAHDC	66	0	13	17	18	18	312	330	0.945	2
Project managers	66	0	0	18	23	25	307	330	0.930	3
Contractors	66	0	6	6	16	38	314	330	0.952	1
Suppliers	66	0	0	8	32	26	298	330	0.903	4
Stakeholders involved in the project	66	0	0	23	37	6	293	330	0.888	5

Source: Survey Analysis

Upon reviewing the findings presented in Table 4.11, it was evident that contractors secured the top position as the most influential team for project performance. In housing projects, contractors are pivotal in overseeing and executing multiple facets of the construction process, encompassing everything from initial planning and design to the actual construction and final touches. Their primary responsibility lies in managing the entirety of the construction process, ensuring seamless coordination of tasks and activities to bring the project to fruition (B. J. Jackson, 2020).. Following closely behind, AAHDC ranked as the second most significant and influential team for the 40/60 housing project at the Bole Ayat site 4. On the other hand, project managers, suppliers, and stakeholders were respectively ranked as the 3rd, 4th, and 5th in terms of their impact on project performance. However, based on Table 4.3, ranking scale all teams were at high influence level for the project success. These rankings shed light on the perceived importance and influence of different teams involved in the project, highlighting the key roles played by contractors and AAHDC in driving project success.

In conclusion, the research conducted on the 40/60 housing project at the Bole Ayat site Four emphasizes the critical role of key stakeholders, including clients, contractors, consultants, and top administrators, in influencing project performance and outcomes. The study highlighted the importance of stakeholder engagement and their significant impact on effective communication, decision-making, and problem-solving throughout the project lifecycle.

The findings revealed that contractors were perceived as the most influential parties, followed by AAHDC, project managers, suppliers, and stakeholders. Despite some shortcomings in stakeholder consultation, prioritizing the involvement of these parties can lead to improved project performance, enhanced collaboration, and better outcomes for all involved. Overall, the research stresses the importance of engaging and considering the contributions of various project parties to achieve successful project outcomes.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. CONCLUSION

Based on the results of the analysis, the following conclusions drawn in relation to the specific objectives.

This research has identified several critical issues within the current project practices, including project delays, quality concerns, affordability challenges, inadequate community engagement, and a lack of transparency. These factors pose significant barriers to the overall effectiveness and success of the project.

On the other hand, the project encountered ample challenges largely attributable to weaknesses in project planning and scheduling, insufficient integration of technology, a shortage of skilled labor, inadequate resource management, and ineffective communication. These factors collectively hindered the project's ability to meet its objectives and highlighted the need for improvements in these critical areas.

Finally, contractors emerged as the most significant and accountable entity for the project's poor performance. In addition, other responsible parties included AAHDC, project managers, suppliers, and stakeholders, all of whom played roles in contributing to the challenges faced throughout the project.

In general, to enhance the performance of housing development projects, it is essential to address the identified issues through improved project management practices, stronger community engagement, greater transparency, and effective communication among all parties involved. By implementing these changes, the Addis Ababa Housing Development Corporation can better meet the housing needs of residents and contribute positively to the urban development landscape of Addis Ababa.

5.2. RECOMMENDATIONS

Based on the findings of the assessment on the Addis Ababa Housing Development Corporation at the Bole Ayat Site, Project Four Housing Development Branch Office, the following recommendations proposed:

1. To achieve common goals in housing development, it is essential for governments to enhance project planning and scheduling through standardized frameworks that prioritize timely completion and clarity among stakeholders. Investing in modern construction technologies and project management tools can significantly improve operational efficiency. Moreover, governments should focus on enhancing communication protocols, ensuring that all parties, including community members, kept informed and engaged throughout each project. This transparency fosters trust and collaboration, which are critical for successful outcomes.
2. Community involvement is vital in housing projects, as it ensures that local needs and preferences prioritized. Communities should actively participate in planning discussions and advocate for the integration of accessible technologies that allow them to track project progress. By addressing skill shortages through local vocational training programs, communities can empower residents to participate in construction activities, thereby increasing local employment opportunities and enhancing project outcomes. Moreover, fostering communication between residents and project teams can help identify potential challenges early on, allowing for timely interventions.
3. Scientific societies have a crucial role in providing research and innovation that can inform best practices in construction and housing development. By conducting studies on resource management and quality assurance standards, they can deliver valuable insights that improve efficiency and project quality. Additionally, promoting interdisciplinary collaboration among engineers, architects, and community planners can result in more innovative and sustainable housing solutions. Through these combined efforts, stakeholders can work together effectively to address housing challenges and achieve common goals.

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ANNEXES

Questionnaire format

Questionnaires

Dear Respondents!

The aim of this questionnaire and its formats is to gather information and data for the specified research being carried out as part of the requirements for a Master's degree in Science in Civil Engineering (Construction Engineering and Management stream) at Jimma University, Institute of Technology/JIT.

Research title: Assessment of Current Practice and Challenges of Addis Ababa Housing Development Corporation: The Case of Bole Ayat Site, Project Four Housing Development Branch Office.

Objective: The general objective of this study was to assess the current practices and challenges faced by the Addis Ababa Housing Development Corporation, specifically focusing on the Bole Ayat site within Project Four Housing Development Branch Office.

Confidentiality: The data gathered and the information provided in this questionnaire utilized solely for academic research purposes. All company-specific and interviewee details treated as confidential at all times. Only generalized analysis of the data from this completed questionnaire used in the research process.

Instruction: Please answer, rate by (✓) the questionnaire.

Part 1: Background information/personal information

Q1. Gender: a) Male b) Female

Q2. Age: a) 25-30 b) 31-40 c) 41-50 d) above 51

Q4. What is your highest level of education?

a) Vocational training b) Diploma c) First degree d) Master's degree d) PhD

Q3. Employment type?

a) Client side b) Contractor/subcontractor side c) Consultant side d) Administrative side/ AAHDC

Q4. What is your department in the project?

a) Finance department b) Design department c) Construction Department d) Quality Control Department d) Health and Safety Department e) Procurement Department f) Project Management Department

Q5. Your work experience a) <5 years =1 b) 5-10 years= 2 c) >10years = 3

Part 2: Questionnaires

Rate scale for specific objective one

Strongly disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, strongly agree = 5

Do you agree that the current practice of (40/60) Addis Ababa housing construction Bole Ayat Site 4 project is: (go table)

	Current practice of (40/60) Bole Ayat Site 4 project	1	2	3	4	5
1	Delay in project completion					
2	Quality of construction					
3	Affordability and accessibility					
4	Lack of transparency					
5	Infrastructure and amenities					
6	Community engagement					
7	Sustainability practices					
8	Land tenure and property rights issues					
9	Social inclusion and diversity					
10	Regulatory compliance					

Objective two

(Strongly disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, strongly agree = 5)

1. “Do you agree that one of the project challenge is ...” The respondent’s agreement based on the following table.?

	Challenges	1	2	3	4	5
1	Planning and Scheduling					
2	Quality Control Measures					
3	Training and Skill Development					
4	Resource Management					
5	Technology Integration					
6	Risk Management Strategies					
7	Community Engagement					
8	Regular Monitoring and Evaluation					
9	Sustainability Practices					
10	Integrated Project Management Systems					
11	Lean Construction Principles					
12	Streamlining Communications					

Rate scale for specific Objective three

Very high influence =5, High influence =4, Medium influence =3, Low influence =2, Very low influence =1

Rate the influence of responsiveness of the project team's performance as low efficiency compared to the expected outcomes.

	Responsive Team	1	2	3	4	5
1	AAHDC (RT1)					
2	Project managers (RT2)					
3	Contractors (RT3)					

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4	Suppliers (RT4)					
5	Stakeholders involved in the project (RT5)					

For further understanding

- Rate the influence of enhancing collaboration among various stakeholders to ensure improved project outcomes in future developments.

	Collaboration among various stakeholders	1	2	3	4	5
1	Establish Clear Communication Channels					
2	Define Roles and Responsibilities					
3	Regular Stakeholder Meetings					
4	Encourage Participation and Engagement					
5	Build Trust and Relationships					
6	Collaborative Problem-Solving					
7	Conflict Resolution Mechanisms					
8	Incentivize Collaboration					
9	Feedback Mechanisms					
10	Continuous Improvement					

- Rate the influence of management tools on informing future housing development projects in Addis Ababa.

	Management tools on informing future	1	2	3	4	5
1	Effective Planning and Risk Management					
2	Stakeholder Engagement and Communication					
3	Quality Control and Monitoring					
4	Capacity Building and Skill Development					
5	Sustainable Practices					
6	Community Involvement and Social Impact					
7	Transparency and Accountability					

