ADDIS ABABA UNIVERSITY

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Assessment of the Identified Critical Success Factors in Real Estate Projects: a case of the selected real estate company projects

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A Research Project Submitted to Addis Ababa University School of commerce in Partial Fulfilment of the Requirements for the Award of Master of Arts Degree in Project Management

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Assessment of the Identified Critical Success Factors in Real Estate Projects: a case of the selected real estate company projects

DECLARATION

I, Arsema Eyassu, declare that this research project entitled, **"Assessment of the Identified Critical success factors in Real Estate projects**" is my original work and has never been submitted to this university or any other university for the purpose of earning any degree. This research was made for the partial fulfilment of M.A in Project Management.

Signature: _____ Date: _____

Statement of Certification

This is to certify that Arsema Eyassu has carried out this project work entitled: “Assessment of the Identified Critical Success Factors in Real Estate Projects: a case of selected real estate company project” under my supervision. This work is original in nature and it is sufficient for submission as the partial fulfilment for the award degree in Masters of art in project management.

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This is to Certify that the thesis prepared by Arsema Eyassu, entitled: 'Assessment of the Identified Critical Success Factors in Real Estate: a case of selected real estate company projects' submitted in partial fulfilment of the requirements for the degree of Degree of Master of Arts in Project Management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Abstract

Major critical success factors in the real estate construction industry are inputs which will lead directly or indirectly to project success. The real estate sector has been one of the fastest-growing segments of the Ethiopian economy and the rapidly changing real estate landscape in Addis Ababa is one of the more noticeable aspects of the growth recently experienced in Ethiopia. This paper is aimed to identify and study the critical success factors which lead to the success of a project and show the extent of the relationship between CSFs and project performance. The study has used Saqib. M et al's (2008) seven critical success factors of construction projects, namely Project Management related critical success factors, Procurement System-related critical success factors, Clients related critical success factors, Design Team related critical success factors, Contractor related critical success factors, Project Manager related critical success factors, and Environment related critical success factors, as independent variables where project success is measured in terms of time, cost, and quality which are used as dependent variables. A conceptual framework was also developed using the identified variables for project success. A descriptive research design was used to assess the critical success factors in the selected real estate development projects. Primary and secondary data were also used for the achievement of the study. Primary data was collected using a questionnaire. A total of 37 out of 42 questionnaires were filled by different members of the projects from both Noah and Sunrise real estate companies. Descriptive statistics were used to analyse and interpret the data found from the respondents. Correlation technique was also used to indicate the relationship between the independent and dependent variables. The findings show that the assessment of the practice level of the identified factors within the real estate companies resulted in a high level of mean score values. Moreover, a moderate but positive relationship was observed between project manager related success factors, project management related success factors, clients related success factors, and environment-related success factors with project success. Communication system, a timely decision by the owner, and project manager's competence are some of the factors found to be highly practiced and managed within the companies. Yet some items were given lower ratings as well. Developing an appropriate organizational structure and training the HR in the skill demanded by the project, project design complexity, and delays in producing design documents were among the factors to be rated lower than the rest of the items. Developing a suitable structure which follows the company's strategy and objectives, hire and train the human resources to the required skill demanded by the project so that employees improve their performance, and carefully monitoring, having regular meetings with the design team, and also having a full commitment to the project by both parties were recommended to improve the weak areas that are displayed in the study for better performance.

Key Words: *Critical Success Factors of projects, project success, Real estates in Ethiopia*

Table of Contents

List of Tables

List of Figures

CHAPTER ONE: INTRODUCTION

1.1 Back ground of the study

Ethiopia has been one of the fastest-growing economies in Africa in the last two decades in all economic sectors. Among the many areas, the construction industry is one of the sectors that has shown countless progress. It is the second largest industry next to the agricultural sector in terms of employment: with more than two million people currently working in this sector. The government has been pumping millions of dollars into the housing construction sector which has been a reward for both local and foreign building contractors (World atlas, 2017).

The development of the construction industry is a key indicator of economic performance in developing countries. The development industry provides a significant amount of the gross domestic product (GDP) of the countries and employs a substantial proportion of the working population (Megha & Rajiv, 2013).

Numerous projects have turned around Ethiopia's economic decline, particularly within the city of the capital of Ethiopia. Currently, due to high demands in the construction sub-sectors, Addis Ababa's construction has grown and it has influenced other regional cities, making investors take more steps and actions in expanding their business throughout the country. Furthermore, this has helped Ethiopia to be a major contributor to Africa's economic evolution (Alliance experts, 2017).

Real Estate and Construction are two of the eighteen sectors according to which Ethiopia's national income (GDP) statistics are reported. These two sectors together accounted for 14.9 percent of GDP in the year 2008/09, with a real estate covering 9.1 percent and construction covering 5.8 percent. According to GDP sector data, the real estate and construction sector grew, in real terms, by an annual average of 14.1 and 10.4 percent per year respectively in the past five years to 2008/09, which is somewhat above the average annual growth rate of real GDP during this period (Access capital, 2010).

As has been cited earlier, the real estate sector has been one of the fastest-growing segments of the Ethiopian economy. Indeed, Ethiopia wouldn't have registered double-digit economic growth within the past years had it not been for the expansion of this sector and also the closely affiliated construction sector.

Real estate development (property development) involves purchasing a tract of land, determining the marketing of the project, developing the building program and design, obtaining the necessary public approvals and financing, building the structure, then leasing, managing, and ultimately selling it (Prathamesh. P and Satankar, 2015).

It is a business process, including activities that range from the renovation and re-lease of existing constructions to the purchase of raw land and the sale of developed land or parcels to others (Wikipedia, 2020).

The ever-changing real estate construction in and around Addis Ababa is one among the more visible aspects of the growth recently experienced in Ethiopia. The types of construction range from large residential extensions growing at the city borders to building new office complexes and government-built condominiums being constructed in the city locations. Despite all this new construction activity, Addis Ababa, like most developing country capitals, holds large shanty areas and slum-like settlements scattered across the city. But still, the sub-set of city dwellers that are now part of the formal real estate market has expanded from a small base and are likely to do so for the foreseeable future (Access Capital, 2010).

Many real estate construction enterprises in all countries encounter many difficulties and challenges. However, the issues facing the construction industry in developing countries are significantly more fundamental, more serious, and more complex. In developing countries, these difficulties and challenges sit alongside the overall situation of socio-economic stress, chronic resource shortages and general inability to deal with the major success factors (Ofori, 2013).

According to Meredith and Mantel (2000), the factors considered critical for the success of a project are different for different types of projects and industries while emphasizing that these factors have a very important influence on the success of the project and therefore the organization.

The real estate–development decisions generally consider only the financial aspects of the projects while other factors also contribute to the successful completion of projects. So in that notice, the study tries to identify those key areas, also known as critical success factors that are important for the effective completion of real estate projects.

1.2 Background of the Organization

Residential homes and neighbourhoods built by real estate developers are now becoming increasingly common ever since the first large-scale development was initiated by the pioneer in this sector, namely Ayat Real Estate. At present, the dominant real estate developers for residential villa homes include Ayat Real Estate, Sunshine Real Estate, Ambassador Real Estate, Trancon Real Estate, Gift Real Estate, Enyi Real Estate, Country Club Developers, Flintstones Homes, and Zenebe Frew Real Estate to name a few (Access Capital, 2010). Among the many real estate companies, Sun Rise and Noah Real Estate are used for this study.

Sunrise real estate is a local venture established in 2004, for the sole purpose of investing in property development. Besides real estate development, the group runs a Grade 1 construction firm, engages in import and equipment rental services and embarks on diversifying into the hospitality industry through constructing four and five star designated hotel facilities that will franchise globally reputed brand. The company has so far constructed ten spectacular G+2 luxury villas for sale and rental purposes in Nifas Silk sub-city. Moreover, the sunrise neighbourhood of summit comprises 34 units of G+1 luxury townhouses that are made available for rental purposes. The study will focus on their new residential apartments, summit site, which is still under construction and its hope to be finished this year. Construction of the total eight blocks of B+G+6 (Type 1), G+6 (Type 2), and G+9 (Type 3) apartment building have been factored as part of the ongoing phase of developing the Summit neighbourhood whose entire superstructure has been substantially completed. Each of the apartments spans a 650-meter squares plot of land (a total of 48,000 Sq.m) and the buildings accommodate 284 housing units excluding the dedicated commercial service centers located in their basement.

Noah Real Estate PLC was established in 2013 and has since delivered 5 residential and 4 commercial mid to large scale projects, with additional 7 projects under development at various sites in Addis Ababa. Among those projects, the study will focus on the Goro site with 3 project types, namely: Noah Garden Phase I, having a plot area of 9,000Sq.m, developing a G+4, 200 residential apartments, Noah Garden Phase II, planning to build 1,400 residential apartments on 24,000Sq.m area, and Noah Terrace apartment that is developing 360 residential apartments on 15,00Sq.m, all having a construction period of two years.

The final objective of every business is to attain success. However, variation is observed in the definition of success depending on the external factors and company strategies. Because the construction industry is project-based, the success of construction firms are concluded by project success to a large extent (Prathamesh. P and Satankar, 2015).

1.3 Statement of the Problem

It has been stated above that the construction industry has been one of the largest job creators and extremely competitive sector in Ethiopia. However, the progress of the sector seems to be declining from time to time. It has become common to observe stand-still roads, condominiums, and real estate projects in and around all cities of the regions of the country. These failures are directly or indirectly related to failure to identify success factors. Thus, the high number of project failures suggests the existence of underlying major critical success factors that have not been identified (Garbharran. H et al, 2012).

Kerzner (2009) suggests that an organization's goals may not be achieved if attention is not paid to critical aspects like project complexity, requests for changes in scope, financial planning, project risks, technological changes, and organizational restructuring, to name a few. To Barcaui and Quelhas (2004), all of these factors place project management in a strategic position within organizations because the efficient implementation of projects may be the path by which organizations can reach their strategic goals and obtain the most effective possible results.

Mamaru et al (2017) also assert that Ethiopia is one of the developing countries which cannot achieve its construction project goals due to a lack of adherence to different major success factors. As critical success factors create an enabling environment for the project to survive in the first place, they are also key areas where things must go right for the business to succeed. Even knowing that certain tasks would positively leverage others for the overall execution of the project, it's quite overwhelming getting the project team to focus on these key areas in a project (Rockart, 1979).

Similar kinds of problems have been encountered on the selected real estate projects. Those were schedule slippage because of a design issue that has been adjusted after the desi gn was already finished and also regarding the material delay, the political aspect of the country which makes it impossible to import raw material, lack of experienced human resource both

on the technical and non-technical aspect of the project especially in the management aspect and competency of project managers.

In this context, the objective of this paper is to identify the critical success factors and understand the correlation between those factors as cited in academic papers, and its impact on the success of a project. To meet this goal, the concept of success is analysed, and the critical factors are then defined and identified through the application of a questionnaire to specialists from the selected real estate projects.

1.4 Research Questions

1. What are the critical success factors in the real estate development projects?
2. At what level are the identified success factors being practiced?
3. How do the identified critical success factors related to project success?

1.5 Research Objectives

1.5.1 General Objective

The general objective of the study is to assess the critical success factors in real estate projects in the selected real estate development firms.

1.5.2 Specific Objectives

- To identify the critical success factors for real estate construction projects.
- To show the level at which they are practicing those success factors.
- To show the relationship between the identified critical success factors and project success.

1.6 Significance of the study

Knowing Critical success factors is a valuable supplement for the successful completion of any project, it increases the likelihood of project success. So the result of the research will create awareness among the top management and project owners of what kind of activities can contribute to project success and how they can handle their project more effectively to increases the rate of project success. The study will also inform real estate project owners about which criteria are being practiced at their project company.

The results of this research will add to the scarcely available information about critical success factors and establish a basis for future researchers who would like to pursue a study in the area of key performance indicators and project success.

1.7 Scope of the study

The scope of the study emphasized on assessing the critical success factors in real estate projects regarding the selected real estate companies. Those real estate companies are located and operate in Addis Ababa city. Critical success factors were adopted from a study by Saqib.M et al (2008): project management factors, procurement-related factors, client-related factors, design team-related factors, contractor-related factors, project manager related factors, and environment-related factors. Project success was measured in terms of time, cost and quality specification. The real estate companies were chosen deliberately by the researcher for they are convenient in both geographic location and availability of data. A quantitative approach was used where data was gathered in the form of questionnaires from the selected real estate companies.

1.8 Limitations of the study

The scope of the study is limited to only two real estate companies from among many real estate companies found in Addis Ababa because some real estate companies were reluctant to provide the necessary data to fill out questionnaires. This makes it difficult to generalize the result of this study to every real estate project in the city. Therefore, there is a need for a more detailed study in the area for a better understanding of critical success factors in the real estate sector. Moreover, due to the current pandemic (Covid-19) in the country, it was hard to get a larger population because most employees were forced to stay at home from their work. The other point that can be taken as a limitation is the study being purely based on the perception of project team members and therefore it did not view from the buyer's perspective. Thus it is recommended that other researchers undertake such studies examining the same variables using more real estate companies from both perspectives.

1.9 Definition of Terms

Project Success- is the completion of a project within the allocated time, within the budgeted cost, at the proper performance or specification level, with acceptance by the customer/user, with minimum or mutually agreed upon scope changes, and without disturbing the main workflow of the organization (Kerzner, 2009).

Critical Success Factors- are those inputs to the management system that leads directly or indirectly to the success of the project or business; increasing the likelihood of success (Mamaru et al, 2017).

Project Management related Success Factors- are the practices experienced in the companies and actions used by project managers and team members to plan and execute their construction projects to maximize the project's chances of success (Saqib. M et al, 2008).

Procurement System relates Success Factors- focus on the procurement system used by companies and factors that define the scope of procurement as the framework within which construction is brought about, acquired, or obtained (Saqib. M et al, 2008).

Clients/Owners related Success Factors- are one party from different parties that are involved in building construction projects, which are mostly the source of the budget for a project. These are factors concerned with client characteristics, client type, and experience (Saqib. M et al, 2008).

Design Team related Success Factors- focuses on factors consisted of design team experience, delays, and complexity. Those parties play a vital role in the project as their work involves from inception to completion on a project (Saqib. M et al, 2008).

Contractor related Success Factors- are one of the main parties in any construction industry. Those factors focused on variables including contractor experience, contractor's cash flow and the effectiveness of cost control system, site management, supervision and involvement of subcontracting, and speed of information flow (Saqib. M et al, 2008).

Project Manager related Success Factors- focuses on factors consisting of the skills and characteristics of the project managers, their commitment, competence, experience, and authority (Saqib. M et al, 2008).

Environment-related Success Factors- are all external influences on the construction process, including social, political, and technical systems (Saqib. M et al, 2008).

Real Estate- is a business process, encompassing activities that range from buying the land and coordinating the building of properties from scratch or renovation of existing buildings to the sale of developed land to others (Wikipedia, 2020).

1.10 Organization of the study

The research is organized into five chapters. The first chapter is the introduction section containing the background of the study and the organizations under study, statement of the problem, research questions, and research objectives, significance of the study, the scope of the study, limitation of the study, and definition of terms. The second chapter is the literature review, dealing with the kinds of literature related to the study. A conceptual framework is also developed. The third chapter is the research methodology, containing the research approach and design, data type, source and methods of data collection, the target population, data analysis and presentation, scale reliability and validity, and ethical considerations. In the fourth chapter, which is data analysis and interpretation, the data gathered will be analysed, and the findings of the study will be discussed and interpreted. Chapter five or the last chapter is the summary, conclusion & recommendation which will conclude, summarize, and make recommendations for further research based on results found.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this section of the paper, literature on project, project management, construction projects, and the real estate industry in Ethiopia, and critical success factors in construction and real estate projects are reviewed. Literature related to project success are also reviewed to give the best theoretical aspect for this report. Finally, a conceptual framework for the study was developed.

2.2 Theoretical Literature

2.2.1 Project

Despite the existence of various definitions of what a project is, all of them describe similar project characteristics: defined start and end; specific purpose or objectives; a series of complex or interrelated activities; a limited set of resources (Steiner, 1969).

The Project Management Institute (2013) defines a project as a temporary endeavour undertaken to create a unique product or service. The temporary nature of projects indicates that a project has a particular beginning and end. The end is reached when the project's objectives are achieved or because its objectives cannot be met, or when the demand for the project no longer exists.

The outcome of the project may be tangible or intangible. Although repetitive elements may be present in some project deliverables and activities, this repetition does not change the fundamental, unique characteristics of the project work. For instance, office buildings are often constructed with the same or similar materials and by the same or different teams. However, each building project remains unique with a specific location, different designs, different circumstances, and situations (PMI, 2013).

An ongoing work effort is generally a repetitive process that follows an organization's existing procedures. In contrast, due to the unique nature of projects, there may be uncertainties or differences in the products, services, or results that the project creates. Project activities can be new to members of a project team, which may necessitate more dedicated planning than other routine work (Ibid).

A project, as defined by Wysocki, Beck, and Crane (2000), is a sequence of unique, complex, and connected activities having one goal or purpose that has got to be completed by a specific time, within budget, and according to specification. This can be distinguished from a routine set of activities or daily operations which are intended to be a continuous process without a planned end. Projects are also characterized by general attributes such as the purpose, life cycle, uniqueness, interdependencies, and conflict (Meredith J. R & Mantel Jr., 2000).

Merna and Al-Thani (2008) also defined a project as a unique investment of resources to achieve specific objectives, such as the production of goods or services, to make a profit, or to provide a service for a community. A key characteristic of projects is the role played by a key actor named as the project manager. While the project manager is necessary to the process of project management, s/he is only as good as the project team s/he leads. Thus, it might be an underestimation to advocate that the success or otherwise of a project depends solely on the project manager.

Wysocki. R. K. (2014) said in his book, to place projects into perspective, you need a definition: a common starting point. Only too often, people call any work they have to do a "project." Projects have a very specific definition. If a set of tasks or work to be done does not meet the strict definition, then it cannot be called a project. He continues, to be called a project, an undertaking must meet a specific set of conditions. If an undertaking meets those conditions, then it must follow the prescribed project management methodology defined by the organization. He also states Projects arise out of unmet needs. Those needs might be to find a solution to a critical business problem that has evaded any prior attempts at finding a solution or those needs might be to take advantage of an untapped business opportunity.

Some scholars considered that oftentimes project involves large, expensive, unique, complex, and high-risk ventures which are required to be completed within a particular date (time), involving money (cost), deliverable values (quality), and some expected outcomes (Atkinson, R, 1999). It can be understood from existing studies that each project must have well-defined objectives and adequate resources to accomplish the tasks. Meanwhile, Olsen, P. R (1971) also states that a project is also a combination of human and non-human resources pulled together during a temporary organization to achieve a specified purpose.

In this context, a project generally combines a start and end date; constituted of specific goal or target; involves series of complex activities; denotes that plans could deviate if not manage properly, and all tasks must be completed within budget and time.

2.2.2 Project Management

According to Atkinson (1999), there have been many attempts to define project management. Olsen (1971), has written an article on to what extent project management actually can be defined. A definition from the 1950s is that project management is to use a set of tools and techniques to direct the usage of different resources to accomplish a unique, complex, and one-time task within constraints of time, cost, and quality.

The UK Association of project management in 1995 (as cited by Atkinson, 1999), states project management as planning, organizing, monitoring and controlling all parts of a project and that all involved in the project are motivated to achieve the project goals safely and within the stated time, cost and performance. The Project Manager is the one responsible for its team achieving this (Atkinson. R 1999).

Many companies misunderstand the project management concepts and consider project management as more behavioural than a quantitative subject. However, Kerzner (2009) argues Project management can mean different things to different people and that through all these definitions, the suggestions of project management being successful according to the criteria of cost, time, and quality remains.

The growth and acceptance of project management have changed significantly over the past forty years, and these changes are expected to continue well, especially in the area of multinational project management. The growth of project management can be traced through topics such as roles and responsibilities, organizational structures, a delegation of authority and decision-making, and especially corporate profitability (Kerzner, 2009).

He continues, Project management can be defined as the process of achieving project objectives through the traditional organizational structure and over the specialties of the individuals concerned. Project management is applicable for any ad hoc, unique, one-time undertaking concerned with a specific end objective.

The Project Management Institute (2013) formally defines project management as the utilization of skills, knowledge, tools, and techniques to project activities to meet the project requirements. The specific project features and characteristics can influence the constraints on which the project management team needs to focus.

The relationship among these factors is such that if anyone factor changes, at least one other factor is probably going to be affected. As an example, if the schedule is shortened, often the budget needs to be increased to add additional resources to complete the same amount of work in less time. If a budget increase is not possible, the scope or targeted quality may be reduced to deliver the project's result in less time within the same budget amount (PMI, 2013).

Due to the potential for change, the development of the project management plan is an iterative activity and is progressively elaborated throughout the project's life cycle. Progressive elaboration involves continuously improving and detailing a plan as more detailed and specific information and more accurate estimates become available (Ibid).

2.2.3 Project management processes groups

The PMBOK® Guide (2013) defines a process as a set of interrelated actions and activities conducted to create a pre-specified product, service, or result. Each process is characterized by its inputs, the tools and techniques that can be applied, and the resulting outputs.

The project processes are implemented by the project team together with stakeholder interaction. Project managers and their teams should carefully address each process and its inputs and outputs and determine which apply to the project they are working on. The PMBOK® Guide (2013) may be used as a resource in managing a project while regarding the overall approach and methodology to be followed for the project.

Project management, as an integrative effort, requires each project and product process to be appropriately aligned and connected with the other processes to facilitate coordination. Actions taken during one process typically affect that process and other related processes. For example, a scope change typically affects project cost, but it may not affect the communications management plan or level of risk. These process interactions usually require trade-offs among project requirements and objectives, and the specific performance trade-offs will vary from project to project. Successful project management includes actively managing these interactions to meet sponsor, customer, and other stakeholder requirements. In some circumstances, a process or set of processes will need to be iterated several times to achieve the required outcome (Ibid).

It describes the nature of project management processes in terms of the integration between the processes, their interactions, and the purposes they serve. Project management processes are grouped into five categories known as Project Management Process Groups (or Process Groups):

- **Project initiation**: consists of those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase. It helps set the vision of the project—what is needed to be accomplished. The key purpose of this Process Group is to align the stakeholders' expectations with the project's goal, give them clarity about the scope and objectives and show how their participation in the project and its associated phases can ensure that their expectations are achieved.
- **Project planning**: Consists of those processes required to establish the scope of the project, refine the objectives, and define the course of action necessary to achieve the objectives that the project was initiated to achieve. The Planning processes develop the project management plan and the project documents that will be used to carry out the project. The key benefit of this Process Group is to describe the strategy and tactics as well as the course of action or path to complete the project or phase.
- **Project execution**: consists of those processes performed to complete the work defined in the project management plan to satisfy the project specifications. This Process Group involves managing stakeholder expectations, coordinating people and resources, as well as integrating and performing the activities of the project following the project management plan. A large portion of the project's budget will be expended in performing the executing Process Group processes.
- **Project monitoring and control**: Those processes required to track, review, and regulate the progress and performance of the project; identify any areas in which changes to the plan are required, and initiate the corresponding changes. The key benefit of this Process Group is that project performance is measured and analysed at regular intervals, appropriate events, or exception conditions to identify variances from the project management plan. This continuous monitoring provides the project team insight into the health of the project and identifies any areas requiring additional attention.

- **Project closure**: This Process Group verifies and formally establishes the project or project phase is complete within all of the Process Groups. This Process Group also officially establishes the premature closure of the project.

The project management processes are linked by specific inputs and outputs where the result or outcome of one process becomes the input to another process but not necessarily in the same Process Group.

Much of the knowledge needed to manage projects is unique to project management but the major ten knowledge areas of project management, as described in the PMBOK® Guide (2013), are: Project Scope Management, Project Time Management, Project Cost Management, Project Quality Management, Project Integration Management, Project Human Resource Management, Project Communications Management, Project Risk Management, Project Procurement Management, and Project Stakeholder Management. These ten Knowledge Areas are used on most projects most of the time.

2.2.4 Project management in the construction projects

Hendrickson and Au (1989) pointed out that the management of a construction project requires an understanding of modern management as well as comprehension of the design and construction process. Project management, specifically in construction contains a set of objectives that may be accomplished by implementing a series of operations subject to resource constraints.

The construction industry is dynamic in nature due to increasing uncertainties in technology, budgets, and development processes. Nowadays, building projects are becoming much more complex and difficult and require careful integrated process management tools and techniques (AACA 2008, cited by Mamaru et al, 2017).

The construction industry is a sector of the economy that is responsible for planning, design, construction, maintenance, and eventual demolition of buildings and works. It is an important sector of the economy which has multiple backward and forward linkages with other sectors implying it significantly contributes to other socio-economic developments (Pakseresht. A & Asgari, G, 2012).

Construction projects are completed as a result of a combination of many events, interactions, and plans, over the life of a building, with changing participants and processes in a constantly changing environment (Sanvido, et al 1992).

An experimentation of the recent literature indicates that construction projects are frequently completed with large cost overruns, extended schedules, and quality concerns. Delay is defined as the time overruns either beyond the completion date specified in the contract or beyond the date that the parties agreed upon delivery of the project. A delay in the construction may cause losses, or negatively affect some or all of the project parties. The efforts of delay may include time overrun, cost overrun, disputes, arbitration, litigation, and total abandonment (Babu. N.J, 2015).

The construction industry in Ethiopia is the fastest-growing economy among African countries. The country has shown remarkable growth over the past ten years. The average annual growth is 10.9%. This figure is double the Sub Sahara Africa and triple of the world average growths indicating that Ethiopia is one of the fastest economic growths in the world. Though the construction sector is given high renown, several defects are being noted in the sectors that need immediate action and serious management (Mamaru et al, 2017).

Construction project management is the process of managing construction projects. But when talking about managing a construction project in comparison to other types of projects, the distinction is mostly that construction is mission-based. That means that the project's organization ends with the end of the project build. Just like any other project, construction project management has phases, from design to planning to schedule to the build itself. Each of these phases is complicated enough by themselves, but in congress with the whole project, they grow exponentially more complex (Santos. J, 2019).

Construction project management can interact with a variety of different disciplines in the lifetime of a project, from architecture to engineering to public works to city planning. Though the relevant processes, technology or institutional arrangements may differ, the management of projects has much in common with the management of projects in other specialty or technology areas such as aerospace, pharmaceutical or the energy developments (Ibid).

2.2.5 Real Estate Industry in Ethiopia

The real estate sector has been one of the fastest-growing segments of the Ethiopian economy. Indeed, Ethiopia wouldn't have registered double-digit economic growth within the past years had it not been for the expansion of this sector and also the closely associated construction sector (Access Capital, 2010).

Despite being one of the fastest-growing countries, housing remains a major problem in Ethiopia. Although private investors have considerably enhanced development, particularly in the more developed cited like Addis Ababa, this still has not assisted as a resolution to address the challenges to the high number of Ethiopians who do not own a home (Fortune, 2017).

Demand for residential houses in Addis Ababa has continued to rise over the past few years. More Ethiopians are relocating to town putting pressure on the government to satisfy the housing demands. Nevertheless, the private sector has stepped in to provide for some of the demand, especially demand for high-end residential houses. The private sector has been undergoing impressive steady growth as more and more prosperous Ethiopians demand for high-end houses (Ethiopian home, 2018).

Ethiopia's construction sector is one of the significant economic pillars in the country. Information acquired from the Ministry of Construction indicated that the real estate and other construction contributed 12.5 percent in Gross Domestic Product. With increased public demand for residence, the government has been engaged in addressing such issues by employing several condominium house schemes which have primarily benefited middle and low-income earners in the country. The government has constructed a hundred thousand houses with necessary facilities in the capital. These houses are cost-effective, and the government has successfully maximized benefitting the urban poor, civil servants, and women and private real estate developers have also played a significant role in the sector alongside the government. With favourable housing policies, the private real estate sector has thrived, offering housing facilities to middle and high-income earners and other high-end facilities (Ibid).

Real-estate represents a significant portion of most people's wealth, and this is especially true for many homeowners. Private real estate began to thrive in Ethiopia during the late 1990s and early 2000s when real estate companies built homes around the outskirts of Addis Ababa.

Real Estates deliver a large number of modern villas and condominium apartments. The size and scale of the real estate market make it an attractive and profitable sector for many investors. But there are still some factors that affect the real estate market like (Noah Real Estate, 2018):

Demographics: These statistics are an often overlooked but significant factor that affects how real estate is priced and what types of properties are in demand. Major shifts in the demographics of a nation can have a large impact on real estate trends for several decades.

Interest Rates: Interest rates also have a major impact on the real estate markets. If you're considering buying a home with a mortgage it is beneficial to research interest rates using a mortgage calculator. Changes in interest rates can greatly influence a person's ability to purchase a residential property. That is because the lower interest rates go, the lower the cost to obtain a mortgage to buy a home will be, which creates a higher demand for real estate, which again pushes prices up.

The Economy: This is generally measured by economic indicators such as the GDP, employment data, manufacturing activity, the prices of goods, etc. Broadly speaking, when the economy is sluggish, so is real estate.

Government Policies/Subsidies: Legislation is also another factor that can have a sizable impact on property demand and prices. Tax credits, deductions, and subsidies are some of the ways the government can temporarily boost demand for real estate for as long as they are in place. Being aware of current government incentives can help you determine changes in supply and demand and identify potentially false trends.

Although some of these above-mentioned factors suggest a clear-cut relationship between the factor and the market, in practice, the results can be very different. However, understanding the key factors that drive the real estate market is essential to performing a comprehensive evaluation of a potential investment.

2.2.6 Project success and project management success

According to the PMBOK (2013), project success is measured by product and project quality, timeliness, budget compliance, and degree of customer satisfaction. Since projects are temporary in nature, the success of the project should be measured in terms of completing the project within the constraints of scope, time, cost, quality, and resources, as approved between the project managers and senior management.

Although project success is a core project management concept, some literature shows that there is no standardized definition of "project success" (Frever et al., 2018). As Prabhakar (2008) states, there is a wide divergence of options in this field; the only agreement seems to be the disagreement on what constitutes 'project success.

As success on a project means meeting certain expectations for a given participant, whether it's the owner, planner, engineer, contractor or operator, these expectations may be different for each participant and the study of project success and major success factors is often considered as one of the essential ways to improve the effectiveness of project delivery (Alias, Z. et al, 2014).

According to Kerzner (2009), the definition of project success has been modified to include completion within the allocated time, within the budgeted cost, at the proper performance or specification level, with acceptance by the customer/user, with minimum or mutually agreed upon scope changes, without disturbing the main workflow of the organization, and without changing the corporate culture.

Very few projects are completed within the original scope of the project. Scope changes are inevitable and have the potential to destroy not only the morale of a project but the entire project. Scope changes must be held to a minimum and those that are required must be approved by both the project manager and the customer/user. Project managers must be willing to manage and make concessions/trade-offs, if necessary so that the company's main workflow is not altered. Most project managers view themselves as self-employed entrepreneurs after project go-ahead and would like to divorce their project from the operations of the parent organization. This is not always possible. The project manager must be willing to manage within the guidelines, policies, procedures, rules, and directives of the parent organization (Ibid).

The successes of a project, as well as factors that affect this success, are considered in several ways by different project management scholars. There are no unified definitions of these concepts although there is a consensus about the importance of this aspect for the project management practice (Mamaru et al, 2017).

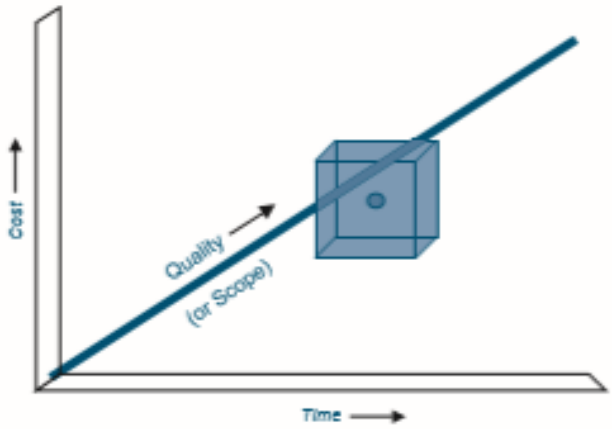
Early studies in the mid-1900s linked project management and project success to the triple objectives of Time, Cost, and Quality (Wan. A et al, 2006). But it is important to distinguish project success and project management success. De Wit (1988) seems to be among the first to note that project success is measured against the overall objectives of the project and project management success is measured against the traditional measures of performance against cost, time, and quality.

Baccarini (1999) also pointed out that project success is divided into product success that deals with goal and purpose, and project management success that deals with outputs and inputs. Munns and Bjeirmi (1996) stated that the difference between the success of the project management and the success of a project is due to the difference between project management success which is short-term objectives, and project success which is long-term objectives. Frever et al. (2018) also state that projects can succeed or fail independently of the project management process.

On the other hand, other researchers, such as Pinto and Slevin (1987), Belassi and Tukel (1996), and Lim and Mohamed (1999) do not distinguish between project management success and project success concepts, and consider project management success as being a part of and contributing to 'project success'. Sebestyen (2017) has recently claimed that successful project management leads to a successful project.

Kerzner (2009) states that despite the very few projects that are ever completed without trade-offs or scope changes in time, cost, and quality, success can still be achieved. As a result, he illustrates that success can be defined as a cube where the singular point of time, cost, and quality is a point within the cube. Moreover, he states that there are primary and secondary definitions of success.

Fig 2.1: Graphical visualization of the success



Source: Kerzner (2009, Page 62)

Silva et al. (2016) indicate that human factors significantly affect the perception of success in every particular case. Mueller (2007) suggests that projects differ in the type, content, complexity, and industry; hence, the criteria to measure success would vary between projects and from industry to industry.

As a final note, it should be understood that simply because a project is a success does not mean that the company as a whole is successful in its project management endeavours. Excellence in project management is defined as a continuous stream of successfully managed projects. Any project can be driven to success through formal authority and strong executive meddling. But for a continuous stream of successful projects to occur, there must exist a strong corporate commitment to project management, and this commitment must be visible (Kerzner, 2009).

2.2.7 Critical Success Factors in Projects

Daniel. R (1961), as cited by Korovin. A (2019), is the first researcher who presented the concept of "success factor" in management literature. In his study, he focused on industry-related success factors that were relevant to any company in a particular industry. However, only in 1979, Rockart refined Success factors into Critical success factors. He stated that organizations in the same industry might exhibit different CSFs due to differences in geographic locations, environmental and strategic situations. Although many researchers have been trying to investigate CSFs for almost 60 years, the CSFs definitions still differ

from each other and there is no agreement between researchers regarding CSFs (Korovin. A, 2019).

Firstly, Rockart (1979) defined critical success factors as "the areas in which satisfactory results will ensure successful competitive performance for the individual, department or organization". In subsequent studies Lim and Mohamed (1999) state that critical success factors are the set of circumstances or influences that contribute to the outcomes of the project. Baccarini and Collins (2003) (cited by Frefer. A et al, 2018) consider project critical success factors as "important influences that contribute to project success".

Baccarini (2009) states that to increase the chances of project success, the organization needs to have an understanding of what the critical success factors are for every particular case or project, systematically and quantitatively assess these critical factors, anticipating possible effects, and then choose appropriate methods of dealing with them.

Project participants or parties tend to see project success differently. Therefore, each party may allocate different success factors depending on the project phase, meaning the factors considered critical for the success of a project will be different for different types of projects and industries while emphasizing that these factors have an important influence on the success of the project and the organization (Pinto and Slevin, 1987).

As it is stated by Khang and Moe (2008), factors identified in the literature are mostly focused on the overall success of the project and failed to explicitly list the factors relevant for the different life-cycle phases of the project.

Frese and Sauter (2003) stated good planning, clear responsibility and accountability, schedule control as well as project leadership and governance, and communications are key areas of successful projects. This means a clear project plan, a plan for risk management, and the commitment and support from stakeholders are the critical success factors for project management.

However, despite growing lists of CSF, projects recognized by success are still rare. According to Zwikael and Globerson (2006), CSFs are general and do not contain sufficiently specific knowledge to support better decision making by the project manager.

From a Project Management perspective, critical success factors are variables, conditions, or characteristics that can have a significant impact on the success of the project when properly sustained, maintained or managed (Milosevic and Patanakul, 2005). Different studies have

identified different CSFs and a lack of consensus among researchers on the criteria for judging project success and the factors that influence that success. Besides, several studies addressing CSFs have observed the impact of context on which factors are considered most critical as well as whether certain CSFs are indeed related to success (Fortune and White, 2006).

Cooke-Davies (2002), identified 12 factors that are, in one way or another, critical to project success and those factors correlate to on time and cost performance:

1. Adequacy of company-wide education on the concepts of risk management.
2. Maturity of an organisation's processes for assigning ownership of risks
3. Adequacy with which a visible risk register is maintained.
4. Adequacy of an up-to-date risk management plan.
5. Adequacy of documentation of organisational responsibilities on the project.
6. Keep project (or project stage duration) as far below 3 years as possible (1 year is better).
7. Allow changes to scope only through a mature scope change control process.
8. Maintain the integrity of the performance measurement baseline.
9. The existence of an effective benefits delivery and management process that involves the mutual co-operation of project management and line management functions.
10. Portfolio and programme management practices that allow the enterprise to resource fully a suite of projects that are thoughtfully and dynamically matched to the corporate strategy and business objectives.
11. A suite of project, programme and portfolio metrics that provides direct ''line of sight'' feedback on current project performance, and anticipated future success, so that project, portfolio and corporate decisions can be aligned.
12. An effective means of ''learning from experience'' on projects, that combines explicit knowledge with tacit knowledge in a way that encourages people to learn and to embed that learning into continuous improvement of project management processes and practices.

Khang and Moe (2008) expand this further by recommending the sets of critical success factors for the various phases of the project life cycle as indicated in Table 2.1.

Table 2.1: Project Critical Success Factors in a Projects Life-Cycle

Phase	Success Factors
Conceptualizing	Clear understanding of project environment Effectiveness of consultation with stakeholders Competency of project team
Planning	Alignment with development priorities Adequate resource support Effectiveness of consultation with stakeholders Competency of project team
Implementation	Compatibility of regulations for project management Effectiveness of consultation with stakeholders Consistency of support for stakeholders Competency of project team
Closing	Adequacy of project closure activities Effectiveness of consultation with stakeholders Competency of project team

Source: Khang, D. B., Moe, T. L (2008), cited by Daniel. F, 2013

Despite the various definitions of what constitutes project success and failure factors, concluding reasons for success or failure is as complex as project management itself. It is worth noting from the definitions of critical success factors given by various authors that the proverbial project management "iron triangle" is not the only benchmark for measuring success or failure of projects. Fortune and White (2006) reviewed 63 publications that focus on critical success factors (CSF) and surmise that there is only limited agreement among authors on the factors that influence project success. They list the three most cited factors as the importance of a project receiving support from senior management; having clear and realistic objectives; and producing an efficient plan.

Table 2.2: Summary of literature reviews on critical success factors (CSFs)

Critical Success Factors	Authors								
	Pinto & Slevin (1987, 1989)	Kerzner (1992, 2001, 2003)	Yeo (2002)	Boyd (2001)	Andersen et al, (2002)	Hyvari (2006)	Turner & Muller (2005, 2007)	Khang & Moe (2008)	Frese & Sauter (2003)
Clear Project Management objectives	√		√		√			√	√
Top Management Support	√		√		√	√	√	√	√
Information/Communication	√			√	√	√			√
Client Involvement	√	√		√	√	√		√	
Competent Project Team	√					√	√	√	
Authority of the Project Manager/Leader	√				√				
Realistic Cost and Time Estimates	√	√	√	√					
Adequate Project Control	√				√				√
Problem Solving Abilities	√					√			
Project Performance and Quality		√		√					
Adequate Resources	√	√			√	√		√	
Planning/controlling	√	√	√		√		√	√	√
Monitor performance and feedback			√	√		√	√		
Project mission/common goals	√				√	√			
Project ownership	√	√					√	√	√

Source: Critical Success Factors identified across publications, cited by Daniel. F, 2013

Adnan et al (2014) argued that for the achievement of organizational goals and objectives a manager must consider the critical success factors in his/her decision. The main purpose of using these factors helps the managers to do effective planning the organization and also a useful tool for effective communication among the managers.

Generally, critical success factors are a set of project variables or factors that are strongly correlated to project success, and whose maximization or minimization, depending on whether they are favourable or unfavourable, will lead to project success.

2.2.8 Relationship between Critical Success Factors and Project Success

From a Project Management perspective, critical success factors are variables or conditions that can have a significant impact on the success of the project when properly managed while project success is the ability of the process to meet the technical goals of the project while not deviating from the three constraints of scope, time and cost (Milosevic and Patanakul, 2005).

Project success is measured based on project management performance. A project is acknowledged successful if it is completed within budget and on schedule within a pre-specified scope, and if it meets users' expectations, quality requisites, and technical specifications. Also, the performance of the project as an objective measure of project targets including completion of the project on schedule, within budget, in good quality, and with fullest customer satisfaction. Time, cost, and quality are the basis of project performance, but also they are not enough for a fair view of project success (Prathamesh. P. & Satankar, 2015).

Rockart (1982) mentioned that a company and its industry should identify its critical success factors to assure future success as they are, for any business, the limited number of areas in which results will ensure the competitive performance of the organization.

The study of project success and critical success factors is a means of understanding and thereby improving the effectiveness of construction projects. Effective and efficient management of critical success factors is the basic requirement of project success. Many kinds of research have been conducted on the Critical Factors influencing Project Success and they show that both critical success factors and project success have a very close and significant relationship with each other (Babu. N.J, 2015).

Determining critical success factors will give an organization a competitive edge and is the ultimate result of success in fulfilling the responsibility of project management companies. This will give rise to satisfied investors, professional bodies which will make the project management company prosper (Alias. A et al, 2014).

Generally, critical success factors are a set of project variables or factors that are strongly correlated to project success, and whose maximization or minimization, depending on whether they are favourable or unfavourable, will lead to project success. They are the few key areas where things must go right for the business to flourish. If results in these areas are not sufficient, the organization's efforts for the period will be less than desired (Rockart, 1982).

2.2.9 Critical success factors in real estate projects

Management activities in a construction projects can be better understood by exploring the critical success factors for improving the performance of their building projects. Success in building construction projects might have numerous limitations (factors of failure) and drivers which can lead to the successful delivery of a project (factors of success) at the same time (Chan, et al, 2004).

Researchers in the project management field has been working on the identification of project success factors. Moreover, this area of interest continues to interest both academician and practitioners to study factors which lead to project success despite the number of studies that already have been done (Muhwezi, J. A., 2014).

There are many demeanours of construction project success. Several assessment methods, techniques, and frameworks have been proposed by researchers to assess the performance of projects and to describe the relationship between success and various criteria (Prathamesh. P and Satankar, 2015).

Construction project success is measured based on project management performance. A project is acknowledged successful if it is completed within budget and on schedule within a pre-specified scope, and if it meets users' expectations, quality requisites, and technical specifications. Also, the performance of the project as an objective measure of project targets including completion of the project on schedule, within budget, in good quality, and with fullest customer satisfaction. Time, cost, and quality are the basis of project performance, but also they are not enough for a fair view of project success. Also, there are several criteria including completing the project on budget and schedule, quality of workmanship, client and project manager's satisfaction, transfer of technology, environment friendliness, and health and safety (Ibid).

Baccarini and Collins (2003) describe critical success factors in such words that they are a combination of important variables that have great positive impacts on the outcomes of the project. Amade (2015) stated that in Nigeria and the rest of the world, organizations met with complexities and problems to meet their due dates in construction projects. The failure of some frequent public sector projects caused a nightmare for all the stakeholders involved in the construction industry (Baccarini, 2009). Manufacturing and construction industries both are widely having projects, but manufacturing industry projects are highly exercised as

compare to the construction projects. Thus, it is important to recognize all those factors that lead the projects to be succeeded.

Real estate development involves purchasing a tract of land, determining the marketing of the project, developing the building program and design, obtaining the necessary public approvals and financing, building the structure, then leasing, managing, and ultimately selling it. The real estate–development decisions generally consider only the financial aspects of the projects (Prathamesh. P and Satankar, 2015).

Considering the high number of activities involved, measuring real estate project success is not a simple task. The success of real estate projects has not been widely investigated except for a small group of studies. Also choosing the right business metrics and monitoring them through effective records identifies and amplifies the competitive value that corporate real estate creates. Despite the studies focusing on the risk factors and several success criteria for different stages of real estate projects such as initiation, planning, execution, sale, and use, there has not yet been a complete model to assess real estate project success; however, systematic evaluation of real estate project success requires a framework that should incorporate both financial and nonfinancial aspects (Ibid).

2.3 Empirical Literature

Various attempts were made by different researchers to determine CSFs in real estate construction. Several variables influencing project success have been proposed. Some variables are common to more than one list, but there is no general agreement on the variables (Babu. N. J, 2015). Cooke-Davies (2002) stated that the development of critical success factors is related to answers questions like what factors lead to project management success and what factors lead to a successful project.

As stated by Frefer (2018), recently there is an increasing number of researchers on critical success factors. Pinto (1986) identified ten critical success factors related to successful implementation. Kerzner (1987) identified six critical success factors for successful projects. Pinto and Prescott (1988) studied ten critical success factors at each of the four stages of the project lifecycle. Belassi and Tukel (1996) identified critical success factors and they grouped these factors into four areas: factors related to the project, project manager and the team members, the organization, and the external environment.

There are a number of studies on success factors in the construction industry. Adnan et al. (2014) identified six factors that considered critical for construction project success and found out that there is a set of different critical success factors for the different objectives which are time, cost, and quality.

Babu. N.J, (2015) conducted a research on factors affecting success of construction project were he identified 60 factors affecting success and grouped them into 10, which are cost, time, quality, productivity, clients-satisfaction, regular & community satisfaction, people, health & safety, innovation & learning, and environment factors based on the literature review. After being rated by construction project professionals, he concluded the main factors affecting the success of construction projects were escalation of material prices (Cost factors), availability of resources as planned through project duration and average delay because of closures leading to materials shortage (Time factors), availability of personnel with a high experience and qualifications, and quality of equipment and raw materials in project (Quality factors), and leadership skills for project managers (Client satisfaction factors).

Ramakrishna et al, 2012 started investigating critical success factors in real estate projects in the Indian context through an extensive review of prior research and they identified and broadly classified the success factors as client objectives, client core competency, project environment, project leader's performance, and project management actions. Among the factors, construction quality under client objectives was underlined as important factor attached to project success as observed from high rankings and stronger association between consultant and contractor, followed by core competence measures.

Saqib. M et al (2008) identifies 77 major success factors construction projects and categorized those under seven main categories that are used in this study. These include project management factors, procurement-related factors, client-related factors, Design team-related factors, contractor-related factors, project manager-related factors, and environment-related factors. He concluded, from among the factors, Clients-related factors, project manager related factors, procurement related factors, design-team related factor, and project management factors were identified as critical to the success of projects.

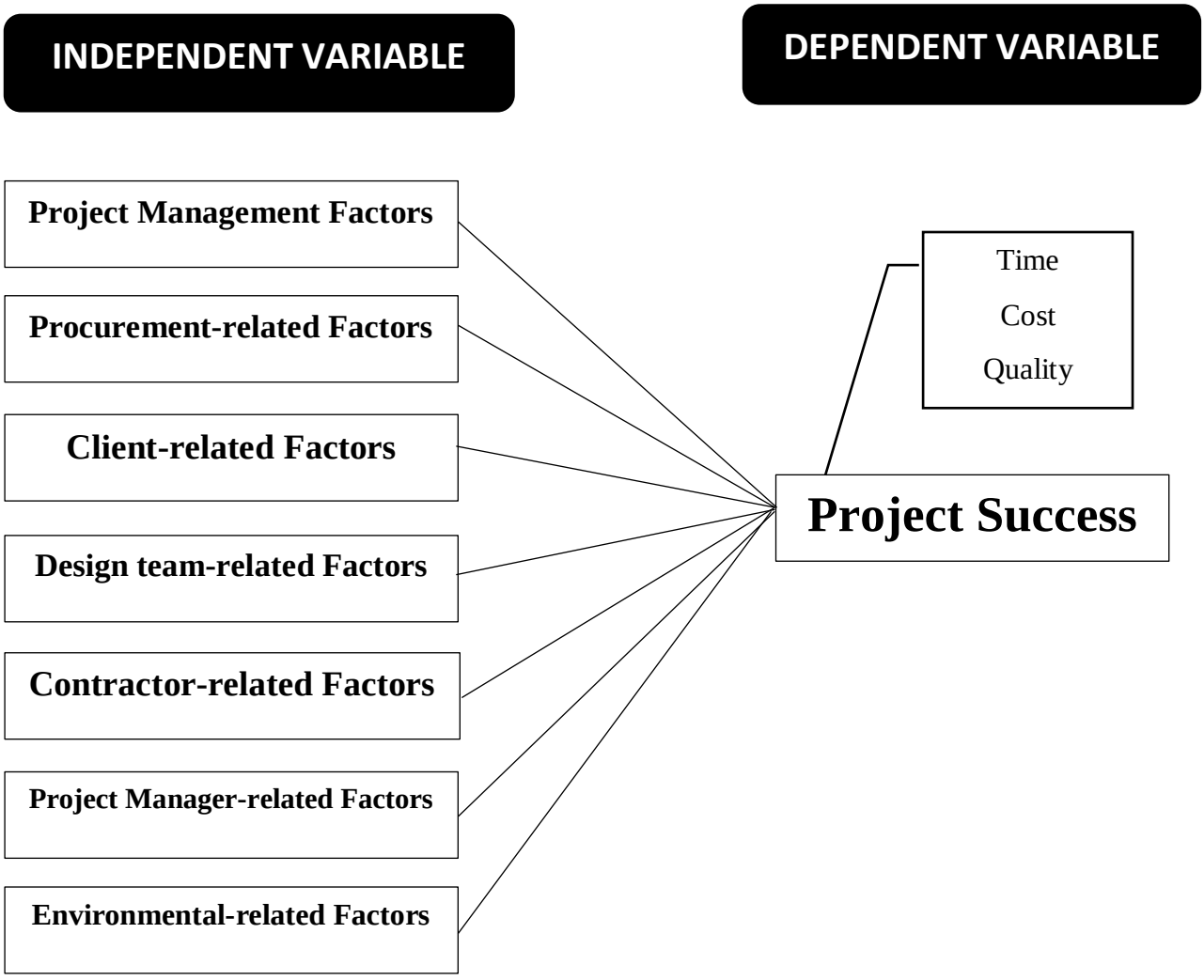
2.4 Research Gaps

As there are a lot of knowledge gaps in the study area of critical success factors particularly regarding real estate projects, much has not been done in this field of study especially in our country. Therefore, this study tries to fill out these gaps to some extent. This research differs in terms of its research area, methods used, and analysis from the literature reviewed. The results will add to the scarcely available data about critical success factors and establish a basis for future researchers who would like to pursue a study in the area of success factors in Ethiopia.

2.5 Conceptual Framework

Based on the literature reviewed, a conceptual framework for this study was developed and is shown in Figure 2.2, the major objective of the study is to analyse the relationship between Critical success factors and Project success.

Figure 2.2 Conceptual framework that shows the relationship between Critical Success Factors and Project Success.



Source: Developed based on literature review

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research approach and design

Based on the type of data, research can either be designed as a quantitative or qualitative approach. The quantitative approach involves the generation of data in a quantitative manner which can be subjected to rigorous quantitative analysis. A qualitative approach to research is concerned with the subjective assessment of opinions, attitudes, and behaviour (Kothari, 2004). This research employs a quantitative approach with the use of questionnaires collected from the project stuff. Quantitative analysis techniques helping us to explore, present, describe and examine relationships and trends within our data (Saunders et al, 2009). Questionnaires are found to be effective due to the relative easiness of obtaining standard data appropriate for achieving the objectives of this study. Questionnaires were framed for the survey based on the identified success factors.

Research projects are undertaken for different purposes. These can be categorized as exploratory, descriptive, and explanatory. For this study, a descriptive research design was used to assess the critical success factors in the selected real estate development projects. Studies that are concerned with describing the characteristics of a particular individual, situation, or group may be termed as descriptive research. This design is also concerned with whether certain variables are associated (Kothari, 2004). So the study aims to assess the connection of those critical success factors with project success.

3.2 Data type, source and methods of data collection

The study used both primary and secondary data sources to gather information about this area of research. Primary data is obtained from project managers and team members who are selected from the real estate companies and was collected by using a questionnaire that was structured by using the identified success factors; project management factors, procurement-related factors, client-related factors, design team-related factors, contractor-related factors, project manager related factors, and environment-related factors. The preference for a questionnaire was based on the fact that respondents were able to complete it without help, anonymously, and it will be cheaper and quicker than other methods while reaching out to larger sample (Robson, 2002). Secondary data was assembled by referring to different books, researches, and articles.

3.3 Target population

As the purpose of this study is to assess the critical success factors in selected real estate projects, the target population of the study is project managers, site managers, and project team members participating in and carrying out the projects at the time of the study. A population is defined as the total collection of elements about which we wish to make some inferences (Stillwell and Clarke, 2011). The number of project team members including the project manager is 30 at Noah real estate Goro site and 12 at sunrise Real estate; which makes the population a total of 42. A census survey was employed as the target population size is limited. Those real estates are selected deliberately by the researcher using non-probability purposive sampling for they are convenient for the researcher in both geographic location and availability of data. Purposive or judgmental sampling enables the researcher to use his/her judgment to select cases that will best answer the research questions (Saunders et al. 2009).

3.4 Data analysis and presentation

Data collected from respondents through the questionnaire was analysed and presented in line with the study objectives using quantitative descriptive statistics such as mean, standard deviation, percentages, and tables with the help of IBM SPSS software. Inferential statistics such as Correlation techniques was used to indicate the strength of relationship between the independent and dependent variables.

3.5 Scale Reliability and Validity

To check the accuracy and applicability of research, a multi-item measurement scale needs to be evaluated, in terms of Validity and Reliability.

Validity implies the degree to which the research instrument measures what it is designed to measure and whether or not it provides adequate coverage of research objectives. In other words, it means the accuracy of a test. It is concerned with whether the findings are really about what they appear to be about (Saunders et al., 2009). Expert opinions from the supervisor and literature searches were done to help to establish validity. To collect reliable data; the researcher used the questionnaires under the guidance of the study advisor.

Reliability refers to the extent to which your data collection techniques or analysis procedures will yield consistent findings (Saunders et al., 2009). It refers to the degree to which

measurement produces consistent outcomes. The reliability of the collected data has been tested using Cronbach‘s Alpha. Howard. M (2018) stated that Cronbach's alpha ranges from 0 to 1 in which values closer to 1 indicate a greater internal consistency of the variables in the scale. In other words, higher coefficient alpha values show greater scale reliability. Additionally, George and Mallery (2003) suggest a Cronbach’s alpha value higher than 0.7 is considered to be reliable. The reliability gets stronger as it goes higher than 0.7 and poorer as it gets lower than 0.7. However, Pallant .J (2007) noted that if the items are less than ten on a scale, it’s difficult to get a high alpha. Therefore the researcher should be looking for something that is above 0.5.

Table 3.1: Reliability statistic

Variables	Number of Items	Cronbach’s alpha
Project Management related Critical Success Factor	**18**	**0.935**
Procurement System related Critical Success Factor	**3**	**0.536**
Clients related Critical Success Factor	**17**	**0.851**
Design team related Critical Success Factor	**5**	**0.904**
Contractor related Critical Success Factor	**7**	**0.834**
Project Manager related Critical Success Factor	**15**	**0.871**
Environment related Critical Success Factor	**11**	**0.716**

Source: Researcher's Survey

The Cronbach’s alpha coefficient in the above table shows that all the results, except the procurement system-related factors, are found to be greater than 0.7 which yielded good reliability. Although the procurement system-related factor resulted below 0.7, it is due to the fewer number of items. Therefore it can be concluded that all factors used indicate good internal consistency of the items in the scale.

3.6 Ethical Considerations

According to Saunders et al. (2009), Ethics refers to the appropriateness of your behaviour in relation to the rights of those who become the subject of your work or are affected by it. Research ethics relates to questions about how the researcher formulate and clarify the

research topic, design the research and gain access, collect data, process and store the data, analyse data and write up the research findings morally and responsibly. This means that the researcher will have to ensure that the way the research is designed is both methodologically sound and morally defensible to all those who are involved.

All respondents were informed of the purpose of the research and how the information gathered is to be used before the study began. The purpose of the research study was explained to respondents to gain their full consent to use the information obtained. The respondents were also familiarized that the collected data will be treated with absolute confidentiality.

CHAPTER FOUR: RESULTS AND DISCUSSION

This chapter presents the result obtained from data analysis, interpretations, and discussions of findings. The study results are analysed and interpreted in line with the objective which was to identify the critical success factors and determine the relationship between critical success factors and project success. A total of 42 questionnaires were given out to all project teams and 37 were returned which makes the response rate 88.09 %.

4.1 Respondents General Information

Among the total 37 respondents of the questionnaire, 22 (59.5 %) were male while 15 (40.5%) of them were female. The age pattern of respondents shows that the majority of the respondents lays within 26-35 which accounts for 70.3% of total respondents, followed by 46-55 with 13.5%, below 25 with 10.8%, and 36-45 with 5.4%. This implies that majority of the respondents are within the age of the youth, though there was distribution in all age categories. Education Status of respondents also indicates that 33 (89.2%) of the respondents are undergraduate degree holders while the remaining 4 (10.8%) are 2nd / Postgraduate degree holders.

In terms of job position, 3 (8.1%) of the respondents are Projects managers while the rest 27 (73%), 3 (8.1%), 2 (5.4%), and 2 (5.4%) are engineers, contractors, consultants, and other project support staff respectively. Years of experience of respondents also indicate that 15 (4.5%) of them have experience below 2 years, 14 (37.8%) between 3-5 years, and 8 (21.6%) of them with more than 5 years of experience.

Table 4.1: Respondents General Information

Category		**Frequency**	**Percentage**
Gender	Male	22	59.5%
	Female	15	40.5%
Age	Under 25	4	10.8%
	26-35	26	70.3%
	36-45	2	5.4%
	46-55	5	13.5%
	Above 55	-	-

Educational Status	Diploma	-	-
	1st Degree	33	89.2%
	2nd Degree/Postgraduate	4	10.8%
	Other	-	-
Job Position	Project Manager	3	8.1%
	Engineer	27	73%
	Forman	-	-
	Contractor	3	8.1%
	Consultant	2	5.4%
	Client/Owner	-	-
	Other Project Support Stuff Members	2	5.4%
Years of Experience	Below 2 Years	15	40.5%
	3-5 Years	14	37.8%
	More than 5 Years	8	21.6%

Source: Researcher's Survey, 2020

4.2 Success Factors Ranking

The second part of the questionnaire was given for the respondents to prioritize which factors they consider to be most important for the successful completion of a real estate project among the seven identified success factors.

Clients related critical success factors are rated as the most important success factors for real estate construction projects by 12 (32.4%) respondents. Project management related critical success factors are ranked as the second most important critical success factor by 6 (16.2%) respondents while Project manager, Environment, Contractor, Design-team, and Procurement related critical success factors are ranked third, fourth, fifth, sixth and seventh respectively as shown in table 4.2 below.

Table 4.2: Success Factors Ranking

Factors	Frequency	Percentage	Rank
Clients Related Critical Success Factors	12	32.4%	1
Project Management Related Critical Success Factors	6	16.2%	2
Project Manager Related Critical Success Factors	5	13.5%	3
Environment Related Critical Success Factors	5	13.5%	4
Contractor Related Critical Success Factors	4	10.8%	5
Design-team Related Critical Success Factors	3	8.1%	6
Procurement Related Critical Success Factors	2	5.4%	7

Source: Researcher's Survey, 2020

4.3 Descriptive analysis of Critical Success Factors

According to the first objective, critical success factors were identified and a set of questions were presented for the respondents to rate those factors that they considered to be important for the successful completion of real estate construction projects on a scale of 1 to 5 ranging as 1 = strongly disagree, 2 = disagree, 3= neutral, 4 = agree and 5= strongly agree. A five-point Likert scale was used to interpret the respondent's responses.

The mean and standard deviation were used to analyse the data from the responses received as shown in the following tables. As adopted from Watiki. C (2014), factors with a mean between 0.5 and 1.5 will not be considered as influencing/contributing factors, and those factors with a mean greater than 1.5 but less than 2.5 were considered as less influencing factors. Factors with a mean greater than 2.5 but less than 3.5 were considered neutral, factors with a mean greater than 3.5 but less than 4.5 were considered as high influencing factors, and factors with a mean value greater than 4.5 would be termed as extremely influencing factors for project success as the questionnaire is presented on a five-level Likert scale.

Table 4.3: Interpretation of mean score values

Range of mean values	Interpretation
0.5 - 1.5	Inconsiderable
1.5 - 2.5	Low
2.5 – 3.5	Neutral/Moderate
3.5 – 4.5	High
4.5 – 5.00	Extreme

Source: Watiki. C (2014),

4.3.1 Project Management Related Critical Success Factors

The study wanted to find out the extent to which project management related factors are performed in the selected real estate companies. Respondents were asked to rate the items under this factor based on their perception of the company's performance.

Table 4.4: Project management related success factors

No	Factors	Mean	Std. Deviation
1	Communication system	4.57	0.765
2	Control mechanism	4.43	0.647
3	Feedback capabilities	3.95	1.026
4	Troubleshooting	4.08	0.795
5	Planning effort	4.41	0.762
6	Coordination effectiveness	3.95	1.290
7	Decision making effectiveness	3.62	1.552
8	Project monitoring	4.16	0.764
9	Developing an appropriate organization structure	2.92	1.460
10	Implementing an effective safety program	3.16	1.444
11	Implementing effective quality assurance program	3.62	1.361
12	Control of sub-contractors' work	4.03	1.013
13	Prior project management experience	3.73	1.326
14	Risk identification and allocation	3.41	1.322

15	Formal dispute resolution process	3.32	1.180
16	Motivation/ Incentives	3.65	1.207
17	Constructability program	3.76	0.955
18	Training the HR in the skill demanded by project	3.03	1.236
Cumulative (Average)		**3.77**	**.792**

Source: Researcher's Survey, 2020

From the respondents' summary in table 4.4, there was no score between 0.5-1.5 and 1.5-2.5. Therefore, all the factors mentioned above are practiced within the companies to some extent. The responses indicated an average mean value of 3.77 with a standard deviation of 0.792 indicating the majority of the respondents agreed to the statements given showing high practice level.

Communication system is rated as extremely high with a mean value of 4.57 and a standard deviation of 0.765 indicating communication being effective in those companies. Control mechanisms, feedback capabilities, troubleshooting, planning effort, coordination and decision making effectiveness, project monitoring, implementing effective quality assurance program, control of sub-contractors work, Prior project management experience, motivation, and constructability program are also rated as high with mean values 4.43, 3.95, 4.08, 4.41, 3.95, 3.62, 4.16, 3.62, 4.03, 3.73, 3.65, and 3.7 respectively while the rest of the factors were rated at a moderate level.

Even though the cumulative mean value of the factor is rated high, some items have been rated lower than the others. Developing an appropriate organizational structure, implementing an effective safety program, and training the HR in the skill demanded by the project were rated low with a mean value of 2.93, 3.16 and, 3.03 respectively showing improvements are needed in these areas.

4.3.2 Procurement System Related Critical Success Factors

The study tried to check how the Procurement system applied is being practiced within the companies in question. The Respondents were asked to rate the items based on their agreement to the statements. The results of their ratings are shown in the table below.

Table 4.5: Procurement system related success factors

No	Factors	Mean	Std. Deviation
1	Project delivery system (e.g. design-bid-build, design build)	3.46	1.070
2	Project bidding method (e.g. price based competitive bidding, negotiated bidding, best value bidding)	3.32	1.226
3	Project contract mechanism (e.g. lump sum, unit price, cost plus, etc.)	4.05	0.970
Cumulative (Average)		**3.61**	**.788**

Source: Researcher's Survey, 2020

As shown in the above table, the response indicates an average mean value of 3.61 with a standard deviation of 0.788 indicating this factor is practiced at a high level. Three items were presented for the respondents to rate the procurement system they use whether it influences their performance.

From the findings the majority of the respondents rated project contract mechanism higher with a mean value of 4.05 while project delivery system and bidding method are rated at a neutral or moderate level with a slight difference in their mean value.

4.3.3 Clients Related Critical Success Factors

The other factor that the study wanted to find out was the degree to which the client/owner of the real estate has managed each item under the factor and their influence on the project performance of the company. Respondents were asked to rate those items which they agree with the statement concerning the client and about their perception of how these items are being performed within their firms.

Table 4.6: Clients related success factors

No	Factors	Mean	Std. Deviation
1	Influence of client/ client's representative	4.27	0.732
2	Client's experience	4.16	0.764

3	Nature of client (privately vs. publicly funded)	4.03	0.957
4	Size of client's organization	3.78	1.004
5	Client's knowledge of construction project organization	3.89	0.966
6	Client's confidence in construction team	4.24	0.683
7	Owner's construction sophistication	4.14	0.631
8	Owner's clear and precise definition of project scope &objectives	4.16	0.866
9	Timely decision by owner/owner's representative	4.27	0.732
10	Owner's risk attitude (willingness to take risk)	4.24	0.683
11	Client's emphasis on low construction cost	4.11	0.774
12	Client's emphasis on high quality of construction	4.00	0.850
13	Client's emphasis of quick construction	4.32	0.747
14	Client's project management	3.84	0.986
15	Client's ability to brief	4.08	0.722
16	Client's ability to make decision	4.11	0.809
17	Client's ability to define roles	4.24	0.796
Cumulative (Average)		**4.11**	**.443**

Source: Researcher's Survey, 2020

Table 4.6 illustrates the client-related factors influence on project success. The response rate indicates an average mean value of 4.11 with a standard deviation of 0.443 indicating the majority of the respondents agree on the influence of the clients/owners on project performance.

Most of the respondents agreed upon all of the items presented under the variable meaning all the items listed under the client's factor were indicated as the highly-rated once since the mean of every item ranges from 3.5-4.5. This shows the consensus that the respondents hold

towards the client or owner of the project has a major influence on the project and overall performance.

4.3.4 Design Team Related Critical Success Factors

The other factor taken as critical factor for success was the contribution and experience of the design team. The respondents were asked to specify the degree to which they agree with the statement concerning the design team. The results of their ratings are shown in the table below.

Table 4.7: Design team related success factors

No	Factors	Mean	Std. Deviation
1	Design team experience	4.14	0.976
2	Project design complexity	3.19	1.411
3	Mistakes/delays in producing design documents	3.19	1.431
4	Design team's contribution to construction (constructability review, value engineering, etc.)	3.59	1.235
5	Adequacy of plans and specifications	3.57	1.482
Cumulative (Average)		**3.54**	**.207**

Source: Researcher's Survey, 2020

As stated in the table, the response rate indicates an average mean value of 3.54 with a standard deviation of 0.207 showing agreement of the respondents on the influence of the design team on project success.

Design teams experience, team's contribution to the construction project, and adequacy of plans and specification are rated high with a mean value of 4.14, 3.59 and 3.57 respectively while project design complexity and mistakes/delays in producing design documents were given an average weight by the respondents as a moderate performance with a similar mean value of 3.19 showing they have experienced difficulties in these areas.

4.3.5 Contractor Related Critical Success Factors

Contractor related success factors are proven to be one of the critical factors for the construction project's success. Hence, project team members have been asked regarding contractors and their response is presented in the table below.

Table 4.8: Contractor related success factors

No	Factors	Mean	Std. Deviation
1	Contractor experience	3.54	1.483
2	Site management	4.03	0.833
3	Supervision	4.38	0.794
4	Extent (Involvement) of Subcontracting	3.57	1.168
5	Contractor's cash flow	3.78	0.854
6	Effectiveness of cost control system	3.81	0.908
7	Speed of information flow	3.62	1.320
Cumulative (Average)		**3.82**	**.765**

Source: Researcher's Survey, 2020

The table illustrates the contractor-related factors influence on project success. The response rate shows an average mean value of 3.82 with a standard deviation of 0.765 indicating the majority of the respondents agree on the influence of the contractors on project success.

Since the mean of every item listed under the contractor's success factor ranges within 3.5-4.5, all are indicated at a high level. This indicates the existence of proper supervision, site management and the other listed factors in the real estate development projects.

4.3.6 Project Manager Related Critical Success Factors

Another critical success factor the study sought to assess was the project manager's contribution to the project's effectiveness. The table below shows the project managers' influence on the successful completion of construction projects. Respondents were asked if the items under this critical success factor exist in their real estate construction projects. The results are presented below.

Table 4.9: Project manager related success factors

No	Factors	Mean	Std. Deviation
1	Project Manager's competence	4.68	0.475
2	Project Manager's experience	4.38	0.758
3	Project Manager's authority to take day-to-day decisions	4.08	0.983
4	Project Manager's authority to take financial decision, selecting key team members, etc.	3.78	1.158
5	Technical capability of project manager	4.57	0.765
6	Leadership skills of project manager	4.41	1.013
7	Organizing skills of project manager	4.38	0.861
8	Coordinating ability and rapport of project manager with contractors/ subcontractors	3.92	1.115
9	Coordinating ability and rapport of project manager with owner/ owner representatives	4.16	0.688
10	Motivating skills of project manager	4.38	0.681
11	Project manager's commitment to meet quality, cost &time	4.30	0.878
12	Project manager's early & continued involvement in project	4.49	0.651
13	Project manager's adaptability to changes in project plan	3.81	1.431
14	Project manager's ability to delegate authority	3.68	1.334
15	Construction control meetings	4.38	0.594
Cumulative (Average)		**4.23**	**.557**

Source: Researcher's Survey, 2020

The above table shows that the project manager related success factors resulted in an overall mean value of 4.23 with a standard deviation of 0.557 indicating a high-performance level of

the project manager and respondents agreeing on the extent to which the project manager performs and exercises all of the above-stated items.

Most of the respondents agreed upon all factors presented meaning all the items listed under the project manager's success factor were rated as the most important once since the mean of every item ranges within 3.5-4.5 with a slight difference in their mean value. This shows that project managers have a major influence on the project and overall performance.

4.3.7 Environment Related Critical Success Factors

The table below shows environmental factors that are considered as external influences on the real estate construction process. Respondents were given to rate factors that influence the overall performance and success of projects based on their understanding and know-how.

Table 4.10: Environment related success factors

No	Factors	Mean	Std. Deviation
1	Economic environment	4.16	0.866
2	Social environment	3.84	0.834
3	Political environment	4.08	1.010
4	Physical work environment	4.22	0.821
5	Industrial relations environment	3.86	1.134
6	Administrative approvals environment	3.92	0.829
7	Commitment of all parties to the project	3.86	1.058
8	Adequacy of funding	4.46	0.650
9	Technology availability	4.00	1.312
10	Human skill availability	4.05	0.970
11	Other factors such as fraudulent practices, corruption, favouritism, lack of ethics	3.62	1.656
Cumulative (Average)		**4.01**	**.535**

Source: Researcher's Survey, 2020

The response rate shows a high-level average mean value of 4.01 with a standard deviation of 0.535. This indicates almost all of the respondents agreed on the influence of external factors on the success of a project.

Since the mean of every item listed under the environment-related success factor ranges within 3.5-4.5, all were indicated as the most important. This shows external environmental factors also have a major influence on construction project success.

Summary of the Critical Success Factors

From the discussions given under each table, we can see that almost all of the success factors are applied in the selected real estate companies. The table below shows the cumulative mean value of each critical success factor.

Table 4.11: Summary of critical success factors

No	Factors	Mean	Std. Deviation	Level
1	Project Management related Critical Success Factor	3.77	.792	High
2	Procurement System related Critical Success Factor	3.61	.788	High
3	Clients related Critical Success Factor	4.11	.443	High
4	Design team related Critical Success Factor	3.54	.207	High
5	Contractor related Critical Success Factor	3.82	.765	High
6	Project Manager related Critical Success Factor	4.23	.557	High
7	Environment related Critical Success Factor	4.01	.535	High

Source: Researcher's Survey, 2020

As can be seen from the above table, all the factors that are considered as critical success factors have a great contribution to the successful completion of a project and are being practiced within the companies under study. From all the identified success factors, project manager related critical success factors have the highest mean value (4.23), followed by clients-related success factors (4.11), environment-related success factors (4.01), contractor-

related factors (3.82) project-management related factors (3.77), procurement system-related factors (3.61), and design-team related factors (3.54).

Watiki. C (2014) stated that a standard deviation of more than one would mean there was no consensus among the respondents; the higher the standard deviation, the higher the level of dispersion among the respondent's response. Likewise, the standard deviation for all the factors listed was less than 1. Therefore, it was concluded that there was a consensus among the respondents.

4.4 Project Success

The project success assessment was made by the respondent's judgment about the project success measured by the triple constraint in project management, namely cost, time, and quality. The respondents were requested to indicate the extent to which their current project is going to be completed within the planned cost, time, and quality.

Table 4.12: Project Success Assessment

No	Factors	Mean	Std. Deviation
1	The project was completed on time or Earlier	4.08	1.010
2	The project was completed within or below the budget	4.08	1.038
3	The project was completed within the assigned standard quality	4.30	0.909
Cumulative (Average)		**4.15**	**.776**

Source: Researcher's Survey, 2020

As shown in the above table, the response indicates an average mean value of 4.15 with a standard deviation of 0.776 indicating most of the respondents agree on the completion of the project within the stated cost, time, and quality.

From the judgments, majority of the respondents showed that the project is completed within the assigned standard quality with a mean value of 4.30 while the projects completed within the specified time and budget were rated with a similar mean value of 4.08. This indicates that there is high agreeability among the real estate projects in question that the project is a

success. One thing to be taken as a limitation here is the study is purely based on the perception of project team members and therefore it did not view from the buyer's perspective.

4.5 Relationship between CSFs and Project success

The second objective of this study was to determine the relationship between the identified success factor and project success. To assess the strength of the relationship, the Pearson's product-moment correlation coefficient (PMCC) was used. Karl Pearson's coefficient of correlation (or simple correlation) is the most widely used method of measuring the degree of relationship between two variables (Kothari, 2004).

A correlation coefficient enables us to quantify the strength of the linear relationship between two ranked or numerical variables. This coefficient (usually represented by the letter r) can take on any value between -1 and +1. A value of +1 represents a perfect positive correlation. This means that the two variables are precisely related and that, as values of one variable increase, the values of the other variable will increase. By contrast, a value of -1 represents a perfect negative correlation. Again, this means that the two variables are precisely related; however, as the values of one variable increase those of the other decrease. Correlation coefficients between -1 and +1 represent weaker positive and negative correlations, a value of 0 meaning the variables are perfectly independent. Within business research it is extremely unusual to obtain perfect correlations (Saunders. M et al, 2009).

Fig 4.1: Values of the correlation coefficient

Source: Saunders. M, Lewis. P, Thornhill. A (2009)

Table 4.13: Interpretation for Correlation values

Correlation coefficient	Interpretation
0 – 0.29	Weak
0.3 – 0.69	Moderate
0.7 – 1	Strong

Source: Saunders. M, Lewis. P, Thornhill. A (2009)

The table below illustrations the correlation coefficient between the dependent variables, which is project success, and independent variables, project management related critical success factors, procurement system-related critical success factors, clients related critical success factors, design team related critical success factors, contractor related critical success factors, project manager related critical success factors, and environment-related critical success factors.

Table 4.14: Correlation analysis

	PROJECT SUCCESS
PM RELATED FACTORS	.431*
PROCURMENT RELATED FACTORS	.322
CLIENTS RELATED FACTORS	.414*
DESIGN TEAM RELATED FACTORS	.101
CONTRACTOR RELATED FACTORS	.233
P.MGR RELATED FACTORS	.450**
ENVIRONMENT RELATED FACTORS	.358*

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

*. Correlation is significant at the 0.05 level (2-tailed)

Source: Researcher's Survey, 2020

As shown in the table, project manager related factors have the highest positive correlation with project success with a correlation coefficient of 0.450 and a p-value (Significance level) 0.005. The (**) highlights that the probability of this correlation coefficient occurring by

chance alone is less than 0.01 (1 percent). This correlation coefficient is therefore statistically significant. From among the items under this independent variable, the project manager's competence, technical capacity of the project manager, and continued involvement in the project are few of the factors that contributed to the high mean of the respondents.

Project management related critical success factors also indicated a positive yet moderate relationship with project success with a 0.431 correlation coefficient and 0.036 significance level. The level of communication between team members and the control mechanism they use for controlling and monitoring workers as well as the operation of the system to generate desirable results are the major contributors to this variable.

Client related success factors are the other independent variable that showed a moderately positive correlation with project success with a correlation coefficient value of 0.414 and significant level 0.05. Timely decision and influence of owner or owner's representative and also the owner's attitude toward risk are the main contributors to its significant.

The other independent variable with a positive but moderate correlation is environment-related success factors, with a coefficient value 0.358 and a p-value 0.029. Of the items included in the variable, adequacy of funding contributed the highest mean followed by the physical work environment.

However, though the correlation is positive, there is no statistically significant relationship between procurement, design, and contractor related success factors due to their significance level (p-value) being greater than 0.05 according to the response collected from project participants.

Generally, the project manager's critical success factor has the highest but moderate correlation with project completion within time, budgeted cost, and time (project success) following, project management, clients, and environment-related success factors. The rest factors don't have significant relation with success. Although it was thought that all the identified factors will relate and contribute to the success of a project, according to the perception of respondents, it has been concluded that not all factors play an important role and contribute to the success of a project.

CHAPTER FIVE: SUMMARY, CONCLUSION, AND RECOMMENDATION

This research aimed to identify and assess critical success factors and their influence on the successful completion of projects in real estate companies. This chapter is the assembly of the entire study and presents a summary of findings, conclusions are drawn, and recommendations.

5.1 Summary

The study set out to assess critical success factors influencing the successful completion of real estate construction projects in the selected real estate companies. Data was collected through a structured questionnaire. Almost 90% response rate was achieved from all the questionnaires issued to respondents. From the analysis, the following findings were arrived at.

There were no mean scores that have the lowest or with no influence at all, meaning all the critical success factors mentioned in the study influenced project success to some extent. This leads up to the understanding that most of the factors are applied within the companies under study. All the factors score a cumulative mean greater than 3.5 but less than 4.5.

The results further indicated that, from all the identified factors, project manager, clients, and environment-related critical success factors were the top most rated factors influencing project success. However, there was no factor with a cumulative mean greater than 4.5 which implies that none of the factors listed above were practiced or managed to a higher limit and therefore perceived to be extremely influencing project success. The standard deviation was also used to analyse the responses and all the factors listed have a Std. value less than 1 meaning there was an agreement by the respondents.

Out of the seven critical success factors used for the study, four were found to be statistically significant with p-values less than 0.05. These were Project management related critical success factors, Clients related critical success factors, Project manager related critical success factors, and Environment related critical success factors. Procurement, Design team, and Contractor related critical success factors were found to be statistically insignificant since they have p-values greater than 0.05.

Generally, the entire assessment of the practice level of the identified factors within Noah and Sunrise real estate companies resulted in a high level of mean value score.

5.2 Conclusion

This study is undertaken to identify the critical success factors for real estate projects and to determine the relationship between the identified factors and project success as part of the objectives.

From the above findings, it was identified that all the factors fairly influence the successful completion of projects. And of these factors, Project manager related critical success factors, Clients related critical success factors, and Environment related critical success factors were identified to be the top ones. This implies that all the factors were considered and that the selected real estate companies practice the items under those factors though at different levels.

Even though all factors were rated highly by the study participants, some items under the factors show average to low importance to project success. Under the Project management related critical success factors, developing an appropriate organizational structure and training the HR in the skill demanded by the project were rated low. Hence, it can be concluded that the companies can improve the level of project success by giving more emphasis and focus towards improving those factors with the lowest ratings.

The impacts of each success factor on project success are also evaluated in the study and it was concluded that project management, clients, project manager, and environment-related critical success factors are positively and moderately correlated with project success.

To achieve project success, project manager related factors were found to be critical contributors and resulted in a positive correlation. The project manager's competence, technical capability, leadership skills, actively arranging construction meeting and continues involvement in the project were given higher emphasis as to contribute to project performance.

Communication and controlling mechanisms, planning and monitoring effort, troubleshooting from project management success factors, and timely decision and influence of owner or owner's representative and owner's risk attitude from the client's related success factors were some of the factors which were rated higher as to contribute to project performance.

Though there is insufficient evidence to conclude that there is a significant linear relationship and doesn't significantly impact project success in any direction, Procurement, Design team, and Contractor related critical success factors are found being practiced in the real estate companies.

5.3 Recommendation

To improve the practice level of those success factors within the selected real estate companies, the study recommends the seven factors highly influencing project success to be enhanced by the real estate's companies to increase completed projects meaning they can improve the level of project success by giving more emphasis and focus on improving the factors with both highest and lowest weight.

Even though all factors were rated highly by the respondents, there were some items which are given low ratings. Under the Project management related critical success factors, developing an appropriate organizational structure and training the HR in the skill demanded by the project were rated low. This indicates though project management related factors are practiced within the real estate's, it is not being done accurately in a way that contributes to the success of a project.

Therefore, it is recommended that real estate companies must leverage on these areas by developing a suitable structure which follows the company's strategy and objectives to achieve its strategic goals as well as help the team to carry out the purpose of the project and complete them in the specified time cost and quality. This will also help the project team to have a strong sense of identity and become more dedicated to the project, and also for the project manager to improve his/her skills. The company should also hire and train the human resources to the required skill demanded by the project so that employees improve their performance, moral as well as satisfaction toward their jobs which will ultimately contribute to the successful completion of projects.

Project design complexity and delays in producing design documents were also perceived to be rated lower than the rest of the items in the design team-related factors. Hence, it is recommended to emphasize on this areas by developing adequate planning at the very early stages of the project, carefully monitoring and having regular meetings with the design team, and also having a full commitment to the project by both parties.

The researcher recommends a further study to be carried out to determine the impact of those critical success factors on project success since the study didn't figure the identified critical success factors to be clear in real estate construction projects.

The study did not also find any factor that extremely influences project success. Thus future studies should try to examine whether there exist other factors that could extremely influence project success. The study was conducted in Addis Ababa city and is only focused on two

real estate companies hence its findings cannot be generalized to all real estate companies. Thus future studies should consider examining the same variables using more real estate companies.

The other point that can be taken as a limitation is the study is purely based on the perception of project team members and for it did not view from the buyer's perspective. Therefore it is suggested that other researchers undertake such studies from both viewpoints.

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Appendix

Questionnaire for Real Estate Project Teams

This questionnaire is prepared for collecting data for the study to be undertaken under the title of "Assessment of Critical Success Factors in Real Estate Projects". The student researcher will appreciate it if you spend a few minutes of your time filling this questionnaire. The questionnaire is prepared only for academic purpose and your response shall be treated confidentially and anonymously. I thank you in advance and should you have any inquiry, please be free to contact the researcher at the following addresses:

E-mail: arsemaeyassuk@gmail.com

Part I: Respondent General Information

This part is on general information about you as respondent. Please provide answers to the following questions by ticking (√) against the most suitable alternative or giving narrative responses in the spaces provided. Your response shall be accorded all the confidentiality it deserves and will only be used for academic purposes.

1. **Gender**

   Male ☐ **Female** ☐

2. **Age**

   Under 25 ☐ **26-35** ☐ **36-45** ☐ **46-55** ☐ **Above 55** ☐

3. **Educational status**

   - **Diploma** ☐
   - **1st Degree** ☐
   - **2nd Degree/ Postgraduate** ☐
   - **Other** ☐ _____

4. **Job Position**

   - **Project Manager** ☐
   - **Engineer** ☐
   - **Forman** ☐

- **Contractor** ☐
- **Consultant** ☐
- **Client/Owner** ☐
- **Other project stuff member** ☐ _____

5. **Years of experience**
   - **Below 2 Years** ☐ **3-5 Years** ☐ **More than 5 Years** ☐

Part II: Success Factors and Project success

Rank the factors presented in the table based on their importance for project success. You may leave items unranked that you believe have no importance for the successful completion of a project.

Factors	Rank
Project Management Related Critical Success Factors	
Procurement System Related Critical Success Factors	
Clients Related Critical Success Factors	
Design Team Related Critical Success Factors	
Contractor Related Critical Success Factors	
Project Manager Related Success Factors	
Environment Related Success Factors	

Part II: Project success factors

Below are the identified success factors for real estate projects to assess project success in the context of Addis Ababa City. Please show the extent to which you think each factor influences/contributes to project success in your company using the 5 Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, and 5 = Strongly Agree)

1. Project Management Related Critical Success Factors	1	2	3	4	5
Communication system					
Control mechanism					
Feedback capabilities					
Troubleshooting					
Planning effort					
Coordination effectiveness					
Decision making effectiveness					
Project monitoring					
Developing an appropriate organization structure					
Implementing an effective safety program					
Implementing effective quality assurance program					
Control of sub-contractors' work					
Prior project management experience					
Risk identification and allocation					
Formal dispute resolution process					
Motivation/ Incentives					
Constructability program					
Training the HR in the skill demanded by project					

2. Procurement System Related Critical Success Factors	1	2	3	4	5
Project delivery system (e.g. design-bid-build, design build)					
Project bidding method (e.g. price based competitive bidding, negotiated bidding, best value bidding)					
Project contract mechanism (e.g. lump sum, unit price, cost plus, etc.)					

3. Clients Related Critical Success Factors	1	2	3	4	5
Influence of client/ client's representative					
Client's experience					
Nature of client (privately vs. publicly funded)					
Size of client's organization					
Client's knowledge of construction project organization					
Client's confidence in construction team					
Owner's construction sophistication					
Owner's clear and precise definition of project scope &objectives					
Timely decision by owner/owner's representative					
Owner's risk attitude (willingness to take risk)					
Client's emphasis on low construction cost					
Client's emphasis on high quality of construction					
Client's emphasis of quick construction					
Client's project management					
Client's ability to brief					
Client's ability to make decision					
Client's ability to define roles					

4. Design Team Related Critical Success Factors	1	2	3	4	5
Design team experience					
Project design complexity					
Mistakes/delays in producing design documents					
Design team's contribution to construction (constructability review, value engineering, etc.)					
Adequacy of plans and specifications					

5. Contractor Related Critical Success Factors	1	2	3	4	5
Contractor experience					
Site management					
Supervision					
Extent (Involvement) of Subcontracting					
Contractor's cash flow					
Effectiveness of cost control system					
Speed of information flow					

6. Project Manager Related Success Factors	1	2	3	4	5
Project Manager's competence					
Project Manager's experience					
Project Manager's authority to take day-to-day decisions					
Project Manager's authority to take financial decision, selecting key team members, etc.					
Technical capability of project manager					
Leadership skills of project manager					
Organizing skills of project manager					
Coordinating ability and rapport of project manager with contractors/ subcontractors					
Coordinating ability and rapport of project manager with owner/ owner representatives					

Motivating skills of project manager					
Project manager's commitment to meet cost time and quality					
Project manager's continued involvement in project					
Project manager's adaptability to changes in project plan					
Project manager's ability to delegate authority					
Construction control meetings					

7. Environment Related Success Factors	**1**	**2**	**3**	**4**	**5**
Economic environment					
Social environment					
Political environment					
Physical work environment					
Industrial relations environment					
Administrative approvals environment					
Commitment of all parties to the project					
Adequacy of funding					
Technology availability					
Human Skill availability					
Other Factors such as Corruption, lack of ethics, fraudulent practices, favouritism,					

Part IV: Measurement of Project Success

Read the following statement and answer the questions based on your perception about project success. Indicate the degree to which you agree or disagree with the statement by marking one response for each item (1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, and 5 = Strongly Agree).

Project Success	1	2	3	4	5
The project was completed on time or earlier.					
The project was completed within or below budget.					
The project was completed within the assigned standard quality.					