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ASSESSMENT OF THE CRITICAL SUCCESS FACTORS IN THE CASE OF SELECTED BUILDING CONSTRUCTION PROJECTS IN HAWASSA

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Statement of Declaration

I, Biniyam Bekele, declare that this thesis entitled “Assessment of the critical success factors in the case of selected Construction Company in Hawassa” is carried by myself with the close guidance and support of my advisor Dr. Adane I have followed all ethical standards while conducting the research and have duly and properly acknowledged all references and sources. The study is original and has not been used as a requirement for partial fulfillment for any sort of educational qualification at this university or any other

Biniyam Bekele _____ _____

Signature Date

Statement of Certification

This is to certify that this research project by Biniyam Bekele, entitled "Critical success factors influencing construction projects success: The Case of selected construction organizations in Hawassa: The Case on selected construction organizations in Hawassa" submitted for partial fulfillment of the requirements for the degree of Master of Arts in Project Management complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

Name and signature of Members of the Examining Board

Name	Title	Signature	Date
Dr. Adane	Advisor	_____	June. 19, 2021
Dr. Dakito A.	Internal examiner	_____	June. 19, 2021
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ABSTRACT:

Building construction has been one of the fastest-growing segments of the construction industry in Ethiopian. But most of construction projects, especially which are undertaken by local contractors were poor in accordance with time, cost and quality. Even though there are numerous factors, which affect the building construction projects, this research is aimed to assess and study four critical success factors, which influence success of building construction projects. Namely: Time, cost, quality, and project management competency. The four critical factors were identified from the widespread application of project management concepts and general understanding amongst practitioners. And twenty-five construction projects were selected as unit of analysis for this study.

Descriptive research design was used to assess the critical success factors in the selected construction projects. Primary and secondary data were also used for the achievement of the study. A structured questionnaire was developed to gather information to assess and analysis the critical success factors, which affect the success of building construction projects. And other significant project management practices were also captured in relevant literature. Seventy-five questioners were distributed and only fifty-five of the respondents were responded the questionnaires. Then the data obtained from the distributed questionnaires was analyzed using SPSS 24 software. Descriptive statistics were used to analyze and interpret the data found from the respondents. The findings show that the assessment of the practice level of the identified factors within the building construction companies resulted in a high level of mean score values. And all the factors that are considered as critical success factors (project manager competency, time, cost, and quality related factors) have a great contribution to the successful completion of a project and are being practiced within the companies under study. And from all the identified success factors, project manager competency related a critical success factor has the highest mean value. So the research recommend for building construction companies to emphasis more on the competency of their construction project manager. So that they can resolve cost, quality, and time related problems.

Key words: Building construction project success, time, cost, quality, and project manager competency related factors.

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CHAPTER ONE

1. Introduction

1.1 Background the study

A project is an investment activity in which specific resources are committed within a given time frame, to create capital assets over an extended period in expectation of benefits that exceed the committed resource. In order to achieve these expectations, knowledge of project management is critical for successful delivery of projects. Recently, research findings show that more than 73% of construction projects in Ethiopia are under failure category. Therefore, to overcome these problems utilization of project management process are increasingly important as more and more resources are becoming constrained. So according to different scholars, there is conventional agreement about the some of the critical success factors that have major influence on the successful delivery of construction projects.

According to Nguyen, (2004) effective accomplishment of time, cost, quality and stakeholders satisfactions are the main critical factors to say whether the project is successful or failed.

Time and cost overruns on construction development projects during implementation continue to pose great challenges to developing countries (Kigari & wainaina, 2010). And to solve such discrepancy project manager is a person who plays the leading role in planning, executing, monitoring, controlling, and closing project. Construction Project managers are responsible for the overall success of delivering the owner's physical development within the constraints of cost, schedule, quality, and safety requirements.

According to Lientz and Rea, (1992) the project manager has three clearly defined management responsibilities in order to deliver successful construction building projects:

Resource Manager: Managing and direct project resources to achieve the project's objectives.

Planning and control manager: Develop the project plan and ensure that the work is completed on time, within budget, and with acceptable quality.

Coordinator: Interface with upper management regarding project review, approval, and address project issues. The project manager must also relate successfully to line managers and staff.

Kerzner, (1995) stated that the project manager is responsible for ensuring the accomplishment of the group and organizational goals, and objectives. To affect this, he must have a thorough knowledge of standards and cost control policies and procedures so that comparison is possible between operating

results and re-established standards. The project manager must understand organizational behavior to be effective and most have strong interpersonal skills. This is especially important during the controlling function. And in addition to this project management in construction must vigorously pursue the efficient utilization of labor, material, and equipment to improve labor productivity. Above all an excellent project manager in the field of construction should have good knowledge of project management practices. The above performance indicators are the main requirement for the success of the given project. And it does not only depend upon the performance of the project team and their success criteria. The success or failure often is depending upon the contributions of function managers, suppliers, customers, contractors, etc. But as I have mentioned above the project manager as a leader for the construction projects can be the most important person to lead the project to success that is depending on his/her competency (skills, knowledge, and experience). As much as the project manager has experience will be very easy for him/her to reach success, finish the project on time, within budget, and with a high quality of work.

Even though numerous factors affect building construction project, this paper focuses on four main performance indicators, namely: cost, time, quality, and project manager competency. And the research discusses and assesses these four critical factors within selected building constructions projects, which are found in Hawassa. As the main aim of construction stakeholders is delivering successful project, the final objective of the research is to recommend for building construction companies, which factors are more critical than other factors for the success of building construction.

1.2. Statement of the problem

Ethiopia as a country has witnessed a substantial increase in the number of stalled projects due to inappropriate implementation of key success factors and ineffective project manager leadership. There is evidence that the performance of the building construction in Ethiopia is poor as time, cost, and quality and project manager performance, (Abera and Fekadu, 2016).

Many construction failures are directly or indirectly related to failure to identify critical 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). 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 (cost, quality, and time) in a project (Rockart, 1979). Similar kinds of problems have been encountered on the selected building construction companies.

Those were schedule slippage because of payment delay, design issue, and also regarding the material delay, the political aspect of the country, which makes it impossible to import raw material, lake of quality assurance and cost overrun issues like escalation of materials prices, cost of rework, cost of equipment, and cost of variation orders, and competency of project managers are some of the major critical problems encountered within selected projects.

The reasons for these failures are one; most of recruited construction project managers are not qualified in their educational status.

According to my anecdotal information, a project managers were chosen from functional areas inside th e organization with functional knowledge (a subject matter expert, with little or no regard for the projec t management competency component), and most of delegated construction project mangers are hired because of their related experience in their field of the construction responsibilities. So the research considered this traditional practice as weak link for many project failures.

It is easy to observe the competency disparity between the respective project managers. These issues/gaps will have ramifications for project success from the perspective of project management. According to PMI's, (2002). Revised edition of the project manager competency development framework, project success necessitates project manager competency. Instead of employing traditional way, it is vital to use scientific methods to assess project management competency.

And extension times, over budget, and below standard qualities are well known practices for most of Hawassa construction companies. These failures also connected with the competency of their project manager and lack of experience of project team.

So the research will assesses and analysis critical success factors, which have major effect on the success of building construction projects. These are project manager competency, cost, quality and time factors of construction projects.

1.3. Research Questions

As objective of this paper is to assess the most critical project success factors, the main research questions of this study are as follows; -

1. What are most critical success factors on building construction projects?
2. At what level cost factor affect building construction project?
3. At what level time factor affect building construction project?

4. At what level quality factor affect building construction project?

5. To what extent project manager competency influence the performance of construction projects?

1.4. Objectives of the Research

This study set the following general and specific objectives: -

1.4.1 General Objective

The general objective of the thesis is to assess the critical success factors with in selected building construction projects.

1.4.2 Specific Objectives

A) To assess the main success factors, which affect the success of building construction projects.

B) To assess time factor on the performances of building construction projects.

C) To assess the consequence of cost factor on the performance of building construction projects.

D) To assess quality factor on the performances of building construction projects.

E) To assess the project manager competency on selected building construction projects.

1.5. Scope of the Research

1.5.1 Theoretical scope

The theoretical scope of this research is as far as knowing the Critical success factors influencing construction projects success: cost, time, quality, and project manager competency on the success of the building construction projects.

1.5.2. Geographical scope

This research was conducted on twenty-five construction companies. Which are located in Hawassa.

The unit of analysis of this research is twenty-five construction organizations.

1.6. Significance of the Study

The study will contribute to different groups in society such as academicians, policy formulators on issues of project management practices. Policy formulators in county governments will benefit through this study by identifying important areas that ultimately need greater attention to make public projects

successful. This study will help small and medium scale contractors to enhance their existing knowledge about factors affecting to successful implementation of project activities

As the construction activities are booming in Ethiopia, this research wills contribute to identifying which project manager practices have more effect on the performance of construction projects.

Finally, the study will add incredible knowledge to the existing knowledge of public administration that can help the public to understand relevant procedures in project management, which can, in turn, help contractors and other private project specialists in different fields that are usually contracted in ensuring that quality of houses constructed is fit for purpose and under quality assurance standards. Since project management is an area, which deals about project manager growing body of knowledge, this research can contribute to adding some concepts to the existing body of knowledge with a particular emphasis on construction practices being currently implemented.

Even though the research focuses on construction projects, the findings and the outcome could be relevant to practitioners in other types of projects

1.7. Limitations

The research was conducted only within twenty-five construction companies; hence the result isn't considered the wider range of construction projects, this limitation has happened, because of time constraints. So I recommended for future researchers to consider a large sample, which will improve the quality of the outcome.

1.8. Organization of the study

This study is divided into five chapters. The first chapter that is the introduction part includes the introduction, the statement of the problems, objectives, the research question, and the hypothesis the study uses, the significance of the study, its scope, limitations and organization of the study. In the second chapter, the relevant literature related to the study was reviewed and presented as theoretical, empirical, and conceptual reviews. The third chapter talks about the research methodologies. It includes the research approach and design, what was the sample to selected, and why the sources of data and data collection instruments. The fourth chapter discusses the data presentation, how the data was analyzed, and finally the reliability and validity of the study followed by chapter five which concludes the study.

CHAPTER TWO
LITERATURE REVIEW

2. Introduction

This chapter presents a literature review of the research work that was done by various scholars in the field of performance of construction projects. This includes theoretical review, empirical review, and critique of the existing literature relevant to the study, summary, and research gaps.

2.1. Theoretical Framework

2.1.1 Concept of Project Management

A project is an investment activity in which certain resources are committed for a specific period of time in order to develop capital assets over a lengthy period of time with the expectation of profits exceeding the committed resource. According to Project management institution (PMI) A project is a goal-oriented, non-repetitive activity with a defined set of limits, measurable results, and the ability to change something once finished.

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. And the specific project features and characteristics can predict the constraints on which the project management team needs to focus.

There are roles and typical responsibilities for project managers, which have been defined. The project manager role, as applied to a construction project, is defined as addressing the following: "The overall planning, coordination, and control of a project from inception to completion aimed at meeting a client's requirements to produce a functionally and financially viable project that will be completed on time within authorized cost and to the required quality standards "Parsloe, C and Wild, L. J. (1998).

Project manager is responsible for project management activity, which provides the unifying drive that brings the various pieces together by coordinating a team effort to complete the project. Large projects usually have a full-time project manager who reports to a senior executive of the organization or is a delegate of the company's top management.

Synthesizing these explanations, it is evident that the Project Manager is responsible for the whole execution of a project, including insuring that it is completed on schedule, within budget, and with the agreed-upon functionality.

2.1.2. Project Managers competency

According to R Ireland, (1992) the person who sets the expectations for a project is defined as the project manager. The project manager establishes the desired output in terms of cost, quality, and timeliness, ensuring that they are not contradictory. Frequently, he demonstrated that the project manager is to responsible when there is disappointment among team members and consumers, irrespective of the construction company.

The Project Management Competency Development (PMCD) Framework describes project manager's competency as the process by which the project manager continuously applies his knowledge, skills and personal behaviors with the intention of delivering projects that will meet the requirements of the different stakeholders (PMI, 2007).

According to project management competency development framework (PMCF)

There are three dimensions of competence – Knowledge, Performance and Personal – are demonstrated in different ways:

I. Knowledge competence can be demonstrated by passing an appropriately credentialed examination. And who has the required educational qualification.
II. Performance competence can be demonstrated by the successful delivery of projects.
III. Personal competence can be demonstrated by the project manager's behavior when delivering successful projects

Competencies of project management are of a common consensus that there are competencies that should be possessed by project managers to ensure success on projects. According to research, competence is a combination of skills, knowledge and individual characteristics (Crawford, 2005)

Muller and Turner (2010) have indicated there was a positive correlation between project success and leadership competence of a project manager. This competence focuses on how the project manager guides, inspires and motivates team members and other project stakeholders to manage and overcome issues to effectively achieve project objectives.

2.1.3. Role of project manager (PM)

The project manager's position in the construction process varies from company to company, depending on a variety of factors such as the company's size and the scope of the construction project. From start to finish, the project manager is responsible to the sponsor for the day-to-day administration of the project activities, Young, T. L. (2000). According to the Chartered Institute of Building (2002) the key role of the project manager is to motivate, manage, coordinate and maintain the morale of the whole project team.

To manage the project management processes, a person should be well organized, have great follow-up skills, be process-oriented, be able to multi-task, have a logical thought process, be able to determine root causes, have good analytical ability, be a good estimator, and budget manager, and have good self-discipline. The project manager normally is responsible for defining and planning the project. This results in the completion of a project definition and a project work plan. Once the project starts, the PM must successfully manage and control the work, including:

a. Identifying, tracking managing, and resolving project issues.
b. Proactively disseminating project information to all stakeholders.
c. Identifying, managing, and mitigating project risk.
d. Ensuring that the solution is of acceptable quality.
e. Proactively managing scope to ensure that only what was agreed to is delivered, unless changes are approved through scope management.
f. Managing the entire work schedule to ensure that tasks are assigned and executed on time and on budget, Mochal, T. (2003).

2.1.3.1. People Responsibilities

In addition to process skills, a project manager must have good people management skills. This includes:

1) Having the discipline and general management abilities to ensure that individuals comply to the established processes and procedures:
2) Establishing leadership abilities in order to encourage the team to gladly follow directives. Leadership is about presenting a vision to your team and convincing them to accept it and work toward it.

3) Project managers should be held accountable for meeting their expectations by setting realistic, demanding, and explicit expectations for them. This includes giving team members constructive comments on their performance.
4) People should be held accountable for meeting their expectations by setting realistic, demanding, and explicit expectations for them. This includes giving team members constructive comments on their performance. Proactive verbal and written communicator skills, including good, active listening skills. Mochal, T. (2003); Lavender, S. (1996); Walker, A. (2002), stated that the manager can perform these roles, Interpersonal roles, International roles, and Decisional roles, so these roles can be defined as the follows:

2.1.3.2.The Interpersonal Roles:

a) As a figurehead, the manager is a senior position that entails serving as the organization's public face, representing the group at gatherings, and acting as a high-level media spokesperson. The manager should serve as a vital link between management and the rest of the organization's personnel.
b) The manager's role as a leader: The Company looks to its formal leader for direction and motivation in this situation. In this part, one of the most crucial tasks for the project manager is to provide inspiration and activation. In addition, the manager should be in charge of staffing at all levels of the company.
c) The Manager's Role as Liaison: The manager should use all written and verbal contacts with other people or groups, both inside and outside the company, such as the client's customers, suppliers, contractors, engineers, and subcontractors.

2.1.3.3. The Informational Roles:

a. The Manager in the Role of Monitor: In this regard, the manager should be in charge of the organization's control function, gathering data on whether organization budgets for projected project expenses, as well as time and quality targets, are being reached. Furthermore, the manager should be in charge of and oversee the entire workforce as well as the project's processes within the company.
b. The Manager in the Role of Disseminator: The manager should make certain that everyone in the organization has access to the information and data they need to do their jobs effectively..

c. The Manager as Spokesperson. In this case, the project manager serves as the external public relations director, effectively representing his company.

2.1.3.4 The Decisional Roles:

i. The Manager as Entrepreneur: The manager in the entrepreneur role is the one who initiates and designs much of the controlled change in his company. Furthermore, the manager must activate the function in order to increase the organization's performance and position.

ii. The Manager as Disturbance Handler. This involves dealing with both external disturbances such as government changes in policy and internal disturbances such as personality clashes and industrial disputes.

iii. The Manager as Resource Allocator : This necessitates selecting how to allocate the organization's resources, especially capital

iv. The Manager as Negotiator: This includes talks on contract payments both inside and outside the company.

The role of the PM encompasses many activities including Planning and Defining Scope; Activity Planning and Sequencing; Resource Planning; Developing Schedules; Time Estimating; Cost Estimating; Developing a Budget Controlling Quality; Managing Risks and Issues; Creating Charts and Schedules; Risk Analysis; Benefits Realization; Scalability, Interoperability, and Portability Analysis Documentation; Team Leadership; Strategic Influencing and Customer Liaison, Young, T. L. (2000).In added that the project manager's role could be including the following points:

a. Accountability for attaining a positive outcome.
b. Demonstrated abilities in the use of project tools and procedures are required.
c. Being expected to lead a group of people.
d. Working with the unknown and unpredictable.
e. Operating in a position subject to risk.
f. Being regarded with distrust by many of those not involved.
g. Being forced to cut through hierarchical boundaries to get things done.

The PM should be in charge of distributing workers at all levels of the business, as well as communicating with all parties inside and outside the workplace, so that information can be quickly received and sent, and that a solid relationship with the entire workforce can contribute to project success. The PM should ensure that the work is progressing day by day, that the project is under

control, and that the construction process is completed on schedule and within budget. He should also ensure that everyone in the organization has access to the knowledge and data they need to do their jobs properly.

2.1.4. The Project Manager Duties

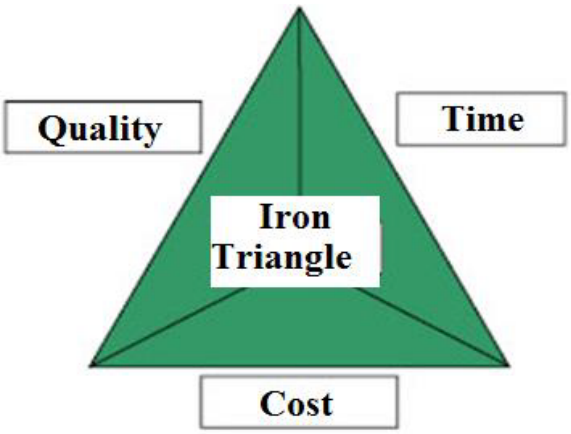
Parsloe and Wild defined the duties of the project managers, as follows:

1. To make certain that the design management plan is followed.
2. To create an integrated program for all design team members' activities in collaboration with the design team.
3. To acquire information and decisions related to the design from the client on behalf of the design team.
4. Obtaining monthly expense reports, monitoring the budget, and obtaining customer approvals at agreed-upon intervals.
5. To examine project control processes and make any necessary changes to the project handbook.
6. To coordinate client and design team activities.
7. To establish key dates for delivery of information for cost checking, client approval, and tender preparation purposes.
8. To act as a liaison between the client, the design team, and governmental agencies.
9. To prepare and Compiling design progress reports.
10. To obtain client approval for lunching.

2.1.5. Project success

The ultimate goal of employing on project manager competency is to ensure project success consistently. There are numerous ways and criteria to assess the development and success of projects; the most outdated is based on the so-called "iron triangle", comprising the principles of cost, time and quality Kerzner, H. (1992). Thus, project that would not overly move away from the primary budget, meet the timeline and fulfill the requirements established by stakeholders would be considered successful.

Figure 2.1: Iron Triangle



Source: Project Management Competency Development Framework (PMCD) framework

When contemplations about project management success are made, it is likely to find and use many different approaches. One of the best traditional ones is the iron triangle method. It confirms that three main aspects that must be achieved together characterize projects: scope, cost and time.

In addition PMI method cost management as: "the cost of resources needed to accomplish project activities the outcome of project decisions on the subsequent cost of using, maintaining, and supporting the product, service, or result of the project "Baccarini (1999). And lastly time management as "the processes needed to manage the timely completion of the project" Baccarini (1999).

But in addition to the above requirements the competency of the project manager directly influences the success of projects; Fetene, N. (2008), Gbadura et al. (2010), Munns and Bjeirmi (1996) highlight that project management has its role in achieving project success, but several other factors beyond the control of project management, also affect project success.

Lim and Mohamed (1999) introduced the micro and macro perspective that looks at project success from a different perspective. The micro view focuses and assesses project management success at project completion, whereas the macro perspective incorporates the operational aspect of projects and concentrates on long-range customer satisfaction Crawford et al (2005). Such a concept is an analogue to De Wit's, (1988) distinction between project success and project management success.

De Wit, (1988) highlights that project success is measured against the overall project objectives following project completion. Nevertheless, project management success is measured during the project life cycle via the classic performance measures Pheng, L.S and Phuan, Q.T. (2006). Milosevic and Srivannaboon (2006), focus on the link between project management and the projects final product as the new dimension for achieving project success, whereas project success is not achieved by

completing the project within its constraints, but only after achieving end-user satisfaction Chileshe, N. (2004). Even so, this approach may intend to deliver individual business outcomes, rather than managing project activities successfully for achieving successful project completion Baker, B.N and Fisher, D. (1983). Moreover, other researchers highlight that measuring success shall be done from the perspectives of the individual owner, developer, contractor, end-user as well as the general public Crawford, L.H. (2005). Interestingly, stakeholder satisfaction is commonly agreed to be a valuable addition to the iron triangle whereas a successful project shall also satisfy its stakeholders Crawford, L.H. (2005).

However, throughout the years, these criteria often are believed to be fundamental - have been slammed for being limited and several efforts have been made to create a more inclusive overview. These attempts can be categorized in two different approaches: addition of more sizes to the basic criteria, or reduction to a single evaluation criterion.

2.1.6 The Relationship between the Project Manager and Project Success

There is a direct link between project management and project success in construction. In construction projects, the PM is regarded as one of the most significant individuals capable of leading and driving projects in the right direction and effectively completing them. Furthermore, they have the potential to be the most essential factor in improving the organization's performance. Hauschildt et al., (2000) said, Effective project managers are widely acknowledged as critical to project success, and many firms have spent significant sums to improve manager selection. According to Turner and Muller (2005), who also has shown that he success of a project manager in managing his or her project is determined by his or her competency, especially in terms of leadership style, which includes emotional intelligence, management focus, and intellect. The primary role of the project manager is to ensure that the project provides the required deliverables to the required quality standards within the time restrictions. Moreover, Turner and Muller (2005) concluded that the project manager's leadership style does influence success, and that different leadership styles are appropriate on different types of projects. The messages for the managers of projects are as follows:

1. When hiring project managers, they should think about their leadership style and pick project managers who have the right leadership style for the project they're working on.
2. They are familiar with the types of projects that the business has undertaken and have developed acceptable leadership styles for those projects within the pool of potential project managers.

3. Their project managers should be valued. The competence of the project manager contributes to the project's success; therefore, competent project managers should be valued.

2.1.7 Project Performance Criteria for Construction Projects

Simsarian, S. W. and Maria, T. (2004) Project success is an abstract concept with no widely accepted meaning, according to the author. He referenced the creation of a ten-criteria composite project success measure to determine the link between project performance and project managers' leadership style. These 10 criteria were primarily used to evaluate engineering projects, information projects, and organizational performance.

2.1.8 Performance of Construction Projects

The success of building projects is largely determined by their performance. To perform is to carry out a sophisticated set of acts that combine skills and knowledge to achieve a useful outcome (Elger, 2008). Project performance has been defined as the degree of achievement of certain effort or undertaking, which relates to the prescribed goals or objectives that form the project parameters (Ahmad, et al. 2009). Having a few but relevant metrics, being related to crucial project objectives, delivering reliable information, and including financial and non-financial measures are among the major requirements of effective performance measurements and measurement frameworks. (Ankrah & Proverbs, 2005), There are numerous performance indicators that can be used to assess a construction project's success. All three important areas of performance are addressed: scope, schedule, and money.

(Alvarado, Silverman & Wilson, 2005). Akintoye and Takim (2002) Construction cost, construction time, cost predictability, time predictability, flaws, client happiness with the product and client happiness with the service were revealed as well as three corporate performance indicators. Specifically: Safety, profitability, and output are all important factors.

Chan and Kumaraswamy (1996) According to the report, throughout the construction phase, a number of unanticipated challenges and deviations from the original design develop, causing cost and time performance issues. Poor site management, unanticipated ground conditions, and slow decision-making by all project teams are identified to be the three most significant issues producing delays and problems with time performance in local construction projects. Okuwoga (1998) According to the report, cost and time performance have been identified as widespread issues in the construction sector around the world. Dissanayaka and Kumaraswamy (1999) Project complexity, client type, team experience, and

communication are all strongly linked to time performance, while project complexity, client characteristics, and contractor characteristics are all strongly linked to cost performance. Reichelt and Lyneis, (1999) the dynamic feedback mechanism was discovered to be in charge of project schedule and budget performance. The rework cycle, feedback loops that create modifications and quality, and effects between work phases are all examples of these processes. Chan (2001) The strongest predictor of average construction time performance of public sector projects was discovered. Both project managers and clients to estimate the average time it will take to complete a construction project can use this relationship. Kuprenas (2003) said that the frequency of design team meetings and the procedure of written design phase progress reporting were found to be statistically significant in lowering design phase costs. Otherwise, it was discovered that project manager training and a project management-based organizational structure are not statistically significant in lowering design phase expenses. Iyer and Jha (2005) Project manager competence; top management support; project manager's coordinating and leadership skill; monitoring and feedback by participants; decision making; coordination among project participants; owners' competence; social, economic, and climatic conditions are among the factors affecting cost performance. The project participants' coordination was as the Coordination among project participants was as the most significant of all the factors having maximum influence on cost performance of projects.

Chanand Kumaraswamy (2002) Specific technological and administrative techniques for increasing construction speed and hence improving construction time performance were offered. Effective communication, rapid information transfers between project participants, better manager selection and training, and detailed construction programs with advanced accessible tools have all been mentioned as ways to speed up performance. Jouiniet al (2004) Managing speed in engineering, procurement, and construction projects is a major component in the competition between creative enterprises, according to the report. Customers can think of time as a resource, and in that case, they will urge the contractor to improve his or her time management.

2.1.9. Cost Factors

All projects are constrained to a limited budget; no company has unlimited resources to spend on projects. Projects also compete for resources between each other. In order to use resources efficiently projects must adhere to approved budget. Thus, the second requirement that control project management is whether it is completed within budget guidelines or not (Pinto, 2013).

Curt (2005) The cost management system, it is stated, keeps track of current expenditures and commitments and forecasts the final cost. And according to Fetene (2008) the most typical repercussions of cost overrun were delay, supplemental agreements, hostile relationships among stakeholders, and project owners' budget shortfall, which directs future efforts to enhance the construction industry's performance. Amusan, (2011) Cost overrun found to be caused by reasons such as inexperienced contractors, insufficient planning, inflation, frequent variation orders, and changes in project design, according to the investigation. Baloyi and Bekker (2011) he observed that the single largest cause to cost overruns for both global and local projects is an increase in material costs.

2.1.10. Time Factors

All projects are constrained to a time frame during which they are to be completed. No projects are intended to continue forever. Thus, one of the basic requirements that control project management and determine its success is whether it is completed on established schedule (Pinto, 2013).

According to Aje, le al. (2009) indicated that the management skill of contractors has a substantial impact on the cost and timeliness of construction projects. In terms of time delays, the most major contributing reason for global projects was late payment delays, whereas design-related factors caused the biggest delays for stadium projects.

2.1.11. Quality Factors

All projects are produced to meet some form of technical specification determined at project initiation. Thus, measuring success equals determining to what extent the project fulfills the specification (Pinto, 2013).

Curt, (2005) stated that the quality management system monitors and analyzes quality of the constructed project and predicts quality problems and issues. Typical quality measures include:

(i) Quality control tests: number done, frequency, and % passed/failed, number of non-conformance issues, number of modification requests and root causes, cost of rework, number of exceptions at turnover, and quality control cost.

(ii) Quality Assurance Cost (cost of resources): Cost as a percentage of construction cost, cost of quality, and cost of quality as a proportion of construction cost are all examples of quality assurance.

Lepartobiko (2012) stated that identifying and eliminating the factors that cause poor project

performance could assure quality. Jha (2006) It was discovered that the project manager's competency and top management support have a significant role in improving the quality of a construction project's performance. Lack of contractor experienced topped the quality related cause of project failure. Ling and Bui (2010) Government officials inspecting the project and very careful supervision when novel building techniques are used were discovered to be important facilitators that contribute to project success. The absence of good data on soil, weather, and traffic conditions is one aspect that contributes to poor performance.

2.2. Empirical Review

Shaban (2008) in his thesis on factors affecting the performance of construction projects in the Gaza Strip, found out that the most important factors agreed by the owners, consultants and contractors were: Average delay due to closure and materials shortages, availability of resources as anticipated throughout the project duration, project manager leadership capabilities, escalation of material prices, availability of highly qualified personnel, and the quality of equipment and raw materials in the project. Buiand Ling, (2010) Foreign experts' involvement in the project, government officials inspecting the project, and very close supervision when new construction techniques are used were discovered to be major enablers that lead to project success in a study conducted in Vietnam on factors affecting construction project outcomes. A factor, which leads to poor performance, is the lack of accurate data on soil, weather, and traffic conditions. Amusan, (2011) In Nigerian building sites, factors impacting construction cost performance were investigated. Cost overruns are caused by variables such as contractor inexperience, insufficient planning, inflation, incessant variation orders, and changes in project design, as well as project complexity, shortening of the project term, and fraudulent practices, according to the report. Fetene, (2008) In Ethiopia, a research was conducted on the causes and impacts of cost overruns on public building construction projects. According to the findings, 67 of the 70 public building construction projects had cost overruns. For specific projects, the cost overrun rate ranges from 0% to 126 percent of the contract value. Iyer and Jha (2006) The project manager's competency and top management support are found to contribute significantly in boosting the quality performance of a construction project, according to a study of factors determining cost performance data from Indian construction projects. Gbadura and Oke, (2010) In general, Nigerian quantity surveyors were found to be autocratic utilizing the Jerrell/Slevin measurement equipment, but Nigerian construction professionals believe that they are more task oriented in carrying out their tasks as building project

managers. Iyagba, Odusami and Omirin, (2003) In Nigeria, we looked into the link between project leadership, team composition, and construction project performance. The hypotheses were tested, and it was discovered that the project leader's professional qualification, leadership style, team composition, and overall project performance all had a substantial link. No significant relationship was found between the project leader's profession and overall project performance.

2.3. Critique of the Existing Literature Relevant to the Study

Nyangilo (2012) did a research on an assessment of the organization structure and leadership effects on construction projects' performance in Kenya. Lepartobiko (2012) studied the factors that influence success in large construction projects. Kigari and Wainaina, (2014) studied emerging trends in economics and management sciences time and cost overruns in power projects in Kenya by closely relating the factors to the various variables. Based on local studies that have been done in Kenya; Auma (2014) Factors affecting the Performance of Construction Projects in Kenya; Fetene, (2008) did a study on causes and effects of cost overrun on public building construction projects in Ethiopia. But all of them focus on common key performance indicators of construction projects in most of the above scriptures were no focus on inclusive or did not include all key performance indicators and as well this research also focus on the common performance indicators, because of time shortage, so the researcher recommended for future researcher to focuses on other independent variables, which have impact for the success of construction projects. And most of the above researchers have no guideline for the contractors, who want to correct their previews mistakes.

2.4. Research Gaps

Fetene (2008) studied the causes and effects of cost overrun on public building construction project in Ethiopia; Siraw (2014) did studied the analysis of factors contributing to time overruns on building construction projects under Addis Ababa city

Administration; Tekalign (2014) studied the role of project planning on project performance in Ethiopia. From these studies that have been done on cost overruns on construction projects, there is a need for future studies to focus on the following areas:

The effects of construction project manager's skills on projects performance. Find out between public and private construction projects, which one has got higher performance level. It is also recommended to develop performance measurement framework and modeling system in order to measure

performance of construction organizations and projects. In addition, it is recommended to study and evaluate the most important factors affecting the performance of construction projects.

2.5. Summary

Construction is one of the sectors leading the way towards modernization and industrialization in Ethiopia. And According to previous studies, the research explained; Project success, the relationship between the project manager and project success, Project Performance Criteria for Construction Projects, Cost Factors, time factor, quality factor and leadership factor, which are some of the basic and major steps for the successful completion of project. It was obtained that there were many fields and topics, which are related to performance such as, construction management, information technology, and factors affecting performance of managers, measurement of project performance, key performance indicator and benchmarking. The key performance indicators are used to evaluate performance of construction projects. These indicators can then be used for benchmarking purposes, and will be as a key component of any construction organization to move towards achieving best practice and to overcome performance problems. In general the literature review stated that project manager has greater impact on the success of the project.

CHAPTER THREE

RESEARCH METHODOLOGIES

3.1 Introduction

This chapter will discuss all information regarding the methods that will be used to carry out the research; research design, research approach, target population, sample size, data collection method, procedures of data collection, sampling techniques, ethical issue and the methodology used in the research to acquire the necessary information to achieve the research objectives. The aim of this research is to assess critical success factors for effective implementation of building construction performance. The methodologies were chosen considering the research nature.

3.2 Research Design

The study is aimed to assess the critical success factors for the successful implementation of building construction practices for selected construction projects in Hawassa. The researcher used descriptive type of research method, because it tried to assess and investigate the existing performance indicators or factors affecting construction performance. The data was collected from both primary and secondary sources of data. The study will try to obtain primary data from the targeted respondents in the field of building construction, and was aimed to distribute the questionnaire to individual professionals like project manager, consultants, contractors and other construction stakeholders. And seventy-five questioners were distributed for selected respondents. And only fifty-four of the respondents respond the questioner.

Research projects are undertaken for different purposes. For this study, a descriptive research design was used to assess the critical success factors in the selected building construction 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 building construction project success.

3.3. Research Approach

In this research, the study used quantitative research approach, because the objectives and the availability of relevant data necessitated the employment of quantitative research methods. Quantitative research approach emphasizes objective measurements and the statistical, mathematical or numerical analysis of data collected through survey. And quantitative analysis techniques helping us to explore, present, describe and examine relationships and trends within our data (Saunders et al, 2009). So questionnaires were framed based on the four building construction success factors.

Different research works reviewed to adopt the survey questionnaire instead of developing a new one, which will help in getting a concrete finding, and was amended the questionnaire to suit our culture. So questioner dates were collected using questionnaire adopted from Sarfo, (2017) "The Effect of Project Management on the Success of Construction Projects".

And the secondary data has obtained from review of documents that mostly completed projects, different websites, contract documents, project reports, correspondence letters and payment certificates investigation thoroughly which were very important in identifying the recurrent problems related to performance problem.

3.4 Target Population

Target population refers to the entire group of individuals or objects from which the study seeks to generalize its findings (Cooper and Schindler, 2014).

The geographical scope of the research is limited to the building construction projects, which are found in Hawassa. The researcher chose the samples for this study from twenty-five construction sites. And the unit of analysis of this research is these twenty-five building construction projects. So our target populations are construction stakeholders, who work under these construction organizations.

The populations of the study were the project manager, consultants, contractors, and other responsible construction stakeholder that are participating with in selected construction project. The total population size of the study was 54 (11 project manager, 7 contractors, and 9 consultants and 27 other responsible stakeholders). And the study used census, as the number of populations is small. This technique was done in order to identify and select information with rich samples and to maximize efficiency and validity of the study

3.5. Sampling Techniques

Sampling is an essential statistical concept that helps to reduce costly data gathering. It is hard to collect data from the whole population and it is a must to use sampling. A sample refers to a limited number of items taken from a population, which is being studied.

Broadly there are two sample design methods: Probability and non -probability sampling. Each category has subdivisions. This research uses random sampling, as it is the purest form of probability sampling. Each member of the population has an equal chance of being selected.

There searcher was distributed the questionnaire for the total representative of project managers, contractors and consultants in the selected construction projects. Because of census, the entire population is very small. The researcher believed that these were the only respondent's who know about performance factor indicators for the building construction projects, as they were exposure in the construction process of the understudied projects.

3.6 Data Collection Instruments (Methods)

Based on the nature of the research different methods were used for the primary and secondary data gathering technique. These data gathering techniques used to carry out the research are:

1. Direct Observation
2. Case study
3. Questionnaires

3.6.1 Unstructured Observation

The researcher undertakes unstructured observation, which is one of the best ways of obtaining a data on the reaction of the stakeholders when the new material is introduced. Along with other data, the researcher tried tousle this data collection mechanizes to know the problem and to assess critical success factors for the success of building construction projects.

3.6.2 Case study

This research, making its case on construction sites, referred to other local and international case studies with similar approaches. The case studies were based upon pre-existing research or a search of

recorded information which were useful to the researchers in gaining the required information used include

a) Expert opinions – construction stakeholders opinions
b) Case studies – previous findings of other researchers
c) Literature searches – research articles and papers

3.6.3 Questionnaire

Relevant dates were collected using questionnaire adopted from Sarfo, (2017) "The Effect of Project Management on the Success of Construction Projects". The respondents were construction stakeholders, which are selected from different construction projects. Selection of data collection method depends on different factors such as nature and scope of enquiry, time needed and precision required. The questionnaire was delivered through online to 75 respondents but only 55 of them responded the questioners.

Saunders et al. (2009) suggested that Questionnaires tend to be used for descriptive or explanatory research. Descriptive research, such as that undertaken using attitude and opinion questionnaires and questionnaires of organizational practices, enable to identify and describe the variability in different phenomena.

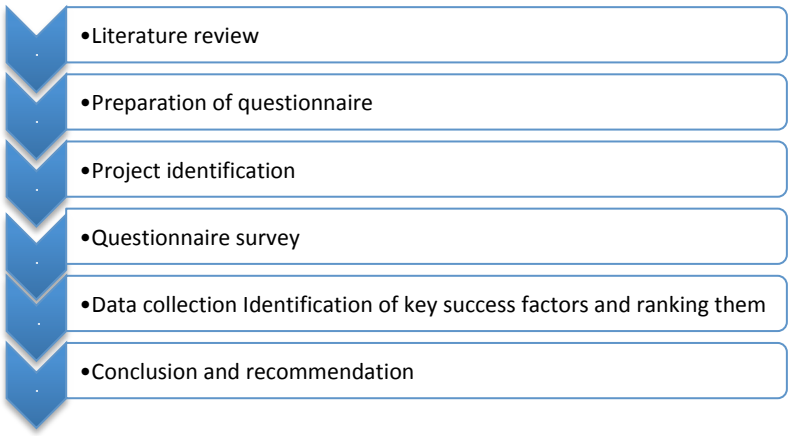
Questionnaires were used to gather data because the information could be collected from a large sample and diverse regions, confidentiality were upheld and saved on time. The study used the data sources to produce the following basic documents: respondents‟ documents and archival documents. Using questionnaires from contractors, consultants and owners collected the respondent's documents.
In addition, some reports related to project management, project management working manual of the company and other relevant documents like journals and published and unpublished materials that will help and strengthen the title.

3.7 Procedures of Data Collection

Data collection instrument were basically primary data, which started after getting permission from selected building construction organizations. Standard questions were adopted from Sarfo, (2017), which used to assess key success factors for the performance of building construction projects. Quantitative questions were prepared to key informants aimed at assessing the major challenges that are

facing building construction projects during the execution phases of the projects. The responses of the fifty-five respondents were ordered, coded and interpreted quantitatively. Questionnaires were distributed to respondents with brief orientation on how respondents use their perceptions and thoughts to answer questions. And the survey pack included a copy of the cover letter with brief introduction on questions.

Figure 2: Procedures of Data Collection



3.8. Structure of the Research Design

This research consist of five main chapters as the following:

Chapter one, provide a background on factors affecting the construction projects, statement of the problem, research objectives, and research questions that the study looked forward to answer, purpose of the study, and significance of the study, limitations and scope of the study. Chapter two, outline the various schools of thought (literature review), which assess factors affecting the success of building construction projects.

The discussions are based on the research objectives. Chapter three outlined the research design and methodology that will be used for purposes of completing the study. It also described research design, target population, and data collection instruments, procedures of data collection, and data analysis and presentation techniques sample techniques, and ethical considerations. Chapter four, cover result and discussion, Chapter five, consists the summary of major findings, discussions of the findings in comparison with the literature review, conclusions and recommendations of the study.

3.9 Data Analysis and Presentation Techniques

After giving numerical code for each response paper, SPSS is selected for the reason that it is readily available and user-friendly analysis tool with which the researcher is familiar. Descriptive statistics such as percentage, frequency and measures of central tendency (mean and standard deviation) were used to summarize the responses. The collected data from the study presented with descriptive method, in tabulated form to make all the data readable and understandable by all concerned parties.

3.10. Validity and Reliability

3.10.1. Validity

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). So the researcher used expert opinions for the surviving process and literature reviews were done to help and to establish validity.

3.10.2 Reliability

After the data is gathered from different source as mentioned above, data analysis was done using SPSS to check the reliability of the data's.

Cronbach's alpha is a coefficient that is used to determine item dependability or internal consistency. It reveals how closely items are related to one another and how bias-free they are. (Sekaran and Bougie, 2009). If Cronbach's alpha value is more than 70% for all variables, then reliability is assumed acceptable.

"Reliability" is how well a test measures what it should. Cronbach's alpha tests used to see if multiple-question likert scale surveys are reliable. Reliability test coefficient can hold a value of 0 to 1 and the result of 0.7 and above implies an acceptable level of internal reliability (Shifera, 2011). From the distributed questionnaire the following reliability test result is found.

Construct	Cronbach's alpha	N of items	Internal consistency

Time	.795	7	Good
Cost	.800	7	Good
Quality	.844	6	Good
Project.manager competency	.728	7	Good

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	54	100.0
	Excluded[a]	0	.0
	Total	55	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
0.7917	5

Table 1 Cronbach's Alpha coefficients (Reliability test for all variables)

The result in the above table revealed that all variables have cronbach's alpha of > 0.7. This implies that the variables, which the research used to assess the critical success factor of building construction projects, are acceptable.

3.11. Ethical issues

Ethics is one of the major considerations in research. The researcher of this study is also subject to the following ethical considerations.

The research work was started after getting the willingness of the stated organizations.

Respondents were clearly communicated about the objective of the research before they are asked to give their answer.

Respondents were not asked about their name, race, religion, etc.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter deals with the presentation of data, analysis and interpretation. To collect the data and extract findings, questionnaires were prepared and distributed to construction stakeholders of selected construction organizations. This chapter presents the result obtained from data analysis, interpretations, and discussions of findings. The study results are analyzed and interpreted in line with the objective, which was to assess and analysis the critical success factors of building construction. A total of 75 questionnaires were given out to all project teams and 55 were returned which makes the response rate 73.34 %.

4.2 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 selected building 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 research used descriptive statistics, because it concerns the development of certain measurement from the raw data. These are mean scores, standard deviations and percentage for each subgroup. Interpreting the result of these values will also give us an indication of the impact of the variable (Pallant, 2005).

The mean and standard deviation were used to analyze 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.

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),

Table 4.2: Interpretation of mean score values

4.2.1 Time Related Critical Success Factors

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

Descriptive Statistics

Factors	N	Mean	Std. Deviation
Original contract duration is too short compared with the scope of the project	54	3.93	1.007
Frequent project schedule change	54	3.22	.984
Poor communication and coordination	54	3.78	1.127

Low level of equipment operator skill	54	3.59	.908
Unforeseen factor during planning	54	3.31	1.006
Waiting time for approval of testing and inspection	54	3.65	.914
Valid N (listwise)	54		
Cumulative (Average)		**3.6**	**0.987**

Source: Researcher's Survey, 2024

Table 4.2.1: Time related success factors

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 3.6 with a standard deviation of 0.987 indicating the majority of the respondents agreed to the statements given showing high practice level. Original contract duration is too short compared with the scope of the project is rated as extremely high with a mean value of 3.93 and a standard deviation of 1.007 indicating Original contract duration is too short in those companies. This is because most of the contractors at the time of tendering, they promises to deliver the given project within short period of time. Poor communication and coordination, Waiting time for approval of testing and inspection, and Low level of equipment operator skill are also rated as high with mean values 3.78, 3.65, and, 3.59 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. Unforeseen factor during planning, and frequent project schedule change were rated moderate with a mean value of 3.31, and, 3.22 respectively showing less effect on time related with the other time factors.

4.2.2 Cost Related Critical Success Factors

The study tried to check how the cost related factors are 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.

Descriptive Statistics

	N	Mean	Std. Deviation
Lack of cost adequate planning/monitoring during pre and post contract stages	54	3.28	.834
Design change	54	4.04	.931
Inadequate review for drawings and contract documents	54	3.59	1.073
Increasing scope of the project	54	4.04	.823
Fluctuation in the cost of material.	54	4.09	.957
Unpredictable weather condition	54	3.04	1.331
Valid N (listwise)	54		
Cumulative (Average)		3.67	.983

Source: Researcher's Survey, 2024

Table 4.2.2 Cost related success factors

As shown in the above table, the response indicates an average mean value of 3.67 with a standard deviation of 0.983 indicating this factor is practiced at a high level. Six questions were presented for the respondents to check whether cost factors influences their performance. From the findings the majority of the respondents rated fluctuation in the cost of material higher with a mean value of 4.09 and with standard deviations .957. And increasing scope of the project and Design change are rated equal mean value 4.04 and with different standard deviation .957 and .931, this means these factors have extreme influencing factors on the cost performance of selected building construction projects. And also Inadequate review for drawings and contract documents has high influence as well with the mean value of 3.59 and 1.073 standard deviation. While Lack of cost adequate planning/monitoring during pre and post contract stages and Unpredictable weather condition at a neutral or moderate level with a slight difference in their mean value.

4.2.3 Quality Related Critical Success Factors

The other factor that the study wanted to find out was the degree to which the quality management system of selected building constructions and their influence on those construction project. Respondents were asked to rate those items, which they agree with the statement concerning the quality and about their perception of how these items are being performed within their firms.

Descriptive Statistics

	N	Mean	Std. Deviation
Quality assurance training	54	3.54	1.077
Quality of material used in the project	54	4.04	.971
Educational qualification and Experience of personnel.	54	4.04	.815

Lack of required monitoring and evaluation	54	2.89	.913
Fulfilling the minimum standards to assure the quality of specific project task.	54	3.80	1.219
Valid N (list wise)	54		
Cumulative (Average)		3.66	1.141

Source: Researcher's Survey, 2020

Table 4.2.3 Quality related success factors

The response rate indicates an average mean value of 3.66 with a standard deviation of 0.965 indicating the majority of the respondents agree on the influence of the quality related factors on project performance.

Most of the respondents agreed upon all of the items presented under the variable, meaning all the items listed under the quality factor were indicated as the highly-rated, except Lack of required monitoring and evaluation, which have medium mean value (2.89). Educational qualification and experience of personnel has high rate value, with mean 4.04 and standard deviation of 0.815. This shows that respondents agree towards the educational qualification and experience of personnel is the most critical factor to assure the quality of building construction project. In general there is conventional agreement between respondents about the influence of quality factors on the success of building construction projects.

4.2.4 project manager competency 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.

Descriptive Statistics

	N	Mean	Std. Deviation
Project management educational qualification and experience	54	4.30	.882
Project management ability on selection of project team	54	4.59	.659
Project manager ability on planning project activities	54	4.11	.904
Determining the project to be executed based on environmental and political consideration	54	4.33	.801
Communication and coordination skill of project manager.	54	3.80	1.139
Commitment to meet cost, quality and time objective	54	4.07	1.147
Project manager's risk assessment and contingency planning skills.	54	4.09	.917
Valid N (listwise)	54		
		4.18	0.921

Source: Researcher's Survey, 2024

Table 4.2.4 project manager competency related success factors

As stated in the table, the response rate indicates an average mean value of 4.18 with a standard deviation of 0.921 showing agreement of the respondents on the influence of the project management competency on building construction project success.

Project management ability on selection of project team, Determining the project to be executed based on environmental and political consideration, Project management educational qualification and experience, and Project manager ability on planning project activities, Project manager's risk assessment and contingency planning skills, Commitment to meet cost, quality and time objective have extremely high influencing rate with mean and standard deviation of (4.59, .659), (4.33, .801), (4.30, .882), (4.14, .904), (4.09, .917), and (4.07, 1.147) respectively. While Communication and coordination skill of project manager rated high value with a mean and standard deviation value of, 3.80 and 1.139 respectively. So project manager competency has high average weight rate by the respondents comparing with other success factors, this show as project manager competency (Educational qualification) is more relevant than other success factors.

4.3. 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.

No	Factors	Mean	Std. Deviation	Level
1	Time related Critical Success Factor	3.6	0.987	High
2	Cost related Critical Success Factor	3.67	0.983	High
3	Quality related Critical Success Factor	3.66	1.141	High
4	Project manager competency related Critical Success Factor	4.18	.921	High

Source: Researcher's Survey, 2024

Table 4.3 Summary of critical success factors

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 competency related critical success factors have the highest mean value (4.18), followed by Cost related Critical success factor (3.67), Quality related critical success factor (3.66), and time related critical success factor (3.6).

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 except quality factors.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATION

5.1 Introduction

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

5.2 Summary

The study set out to assess critical success factors influencing the successful completion of building construction projects in the selected 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. Almost 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, time related factors, cost related factors, quality related factors and project manager competency 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 analyze the responses and all the factors listed have a Std. value less than 1, except quality related factors; meaning there was an agreement by the respondents.

Generally, the entire assessment of the practice level of the identified factors within selected construction companies resulted in a high level of mean value score.

5.3 Conclusion

This chapter is undertaken to conclude the over all assessment of critical success factors for building construction projects, which are found in Hawassa.

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

As stated in chapter two PMI, (2004). Project manager has great responsibility to compete the give construction projects as per specified quality, time, cost, and various stakeholders' expectations. And as stated in chapter four, there is high agreement among respondents about the influence of the project management competency on building construction project success.

Project manager ability on selection of project team, Determining the project to be executed based on environmental and political consideration, Project manager educational qualification and experience, and Project manager ability on planning project activities, Project manager's risk assessment and contingency planning skills, Commitment to meet cost, quality and time objectives have extremely high influencing rate on the success of construction companies. This shows that these factors are the main factors to measure the performance of the project manager ability. And Communication and coordination skill of project manager also rated with high value. So According to the finding project manager competency has high average weight rate by the respondents comparing with other success factors.

The other variable in this research is the influence of cost factor for the success of building construction projects, from the findings of this research the majority of the respondents rated fluctuation in the cost of material has higher value. This mean that, there is high increase on cost of construction materials from time to time, so fluctuation of cost of material has great effect on change in the over all cost of the project. And increasing scope of the project and

Design changes are rated equal mean value 4.04, this means that these factors also have extreme influencing factors for the change on cost with in selected building construction projects.

The third variable in this research is the influence of time factor for the success of building construction projects. Based on respondents of this research, it has the fourth rate of significance value for the successful delivery of building construction projects. How ever most of the selected companies confirm that the frequency of schedule change, poor planning, late delay in payments and waiting time for approval are the main critical issues for the failure of most constructions.

How ever most of the selected companies confirm that original contract duration is too short compared with the scope of the project has rated high value, this implies that most of the contractors at the time of tendering, they promises to deliver the given project within short period of time. This decision enables them to win the given tendering. So because of this problem most of the building construction projects have time delay. Also Poor communication and coordination, waiting time for approval of testing and inspection, and Low level of equipment operator skill has rated as high value, according to the finding the time related factors have high influence for the effective utilization of schedule of the project.

Finally the last parameter is quality. As like that of the rest factors, quality related factors also have high value for success delivery of building construction projects. The research depicts that educational qualification and experience of personnel has extremely high rate value. This shows that respondents agreed towards the educational qualification and experience of personnel is the most critical factor to assure the quality of building construction project. In general there is conventional agreement between respondents about the influence of quality factors on the success of building construction projects

5.4 Recommendation

The basic purpose of assessing the critical success factors, which influence those selected building construction projects, were to accomplish the project success by understanding the core success factors, which leads to improve the practice level of selected building construction, the study recommend the four highly influencing success factors to be enhanced by the selected

construction companies. Meaning they can improve the level of their project success by giving more emphasis on highly rated success factors.

The research concluded almost all factors of project management competency has extremely high influencing rate for the successful delivery of building construction projects, so selected construction companies must emphasis on the ability of their project managers on selecting project team, educational qualification and experience of their project manager, the ability of their project manager to manage under environmental and political consideration, the ability of their project manager to plan each project activities, the ability of their project manager's on risk assessment and contingency planning skills, and they must evaluate the commitment of their project managers to meet cost, quality and time objectives.

In addition to this when there is recruitment for a new project manager, selected construction companies must put standard for measuring their new project manager knowledge, skill and attitude competency.

As the research approved most of cost over run have been occurred, because of fluctuation of cost of materials. So selected construction companies must purchase enough amounts of construction materials, by balancing the concept of time value of money. And I recommend for those selected construction projects to develop defined constriction plan to resolve scope change and related problems.

As the third conclusion demonstrates most of selected construction companies has initial problem on agreeing with original contract duration. They use to promises delivering the given project within short period of time. This is common system to win tendering, so procurers must put additional standard to measure their scheduling capability, rather than accepting their null promise. And construction companies must check communication and coordination ability of their project managers as well as project team members, in order to finish the give task within the given time.

The final parameter depict that educational qualification and experience of personnel has high rate value to insure the quality factors of the given construction companies. So building construction companies must mainly focuses on their personals, in order to achieve better quality of output. Therefore, the researcher recommended that building construction companies must leverage on these areas by developing a suitable structure, which follows the company's strategy and objectives. This will 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.

5.5 Recommendation for Further Studies

The researcher recommends further study to be carried out on determine the relation ship of those critical success factors on project success, since the study didn't figure the relationship of those critical success factors in building construction companies

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Appendix. 1 Research Question

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

POST GRADUATE STUDIES

DEPARTMENT OF PROJECT MANAGEMENT

QUESTIONNAIRES

This questionnaire is prepared for an academic purpose for the fulfillment of Master of Arts degree in project management. The objective of the study is to assess the critical success factors influencing the construction projects success. Questions to be filled by construction stakeholders (project manager, contractor, consultant and other construction stakeholder).

Your response is very important for the success of the study. Writing name will not be necessary. We would like to thank you for your co-operation in advance.

Part 1, DEMOGRAPHIC PROFILE

1. GENDER**:** MALE ☐ FEMALE ☐

2. AGE**:** 18-27 ☐ 28-37 ☐ 38-47 ☐ 48-57 ☐ 58 and above ☐

3. Educational background**:** Primary school completed ☐ Secondary school completed ☐ Certificate ☐ Diploma ☐ Degree and above ☐

Part 2

Please indicate the significance of each factor by ticking the appropriate boxes. This is to assess the following on the scales of not significant to extremely significant.1 = Not significant 2 = Slightly significant 3 = Moderately significant 4 = Very significant5 = Extremely significant

No	Statement	Not significant (1	Slightly significant	Moderately significant	Very significant	Extremely significant
❖ **Time Factors**						
1.	Original contract duration is too short comparing with the scope of the project					
2.	Frequent project schedule change					
3.	Poor communication and coordination					
4.	Low level of equipment operator skill					
5.	Unforeseen factor during planning					
6.	Waiting time for approval of testing and inspection					
❖ **Cost factor**						
1.	Lack of cost adequate planning/monitoring during pre and post contract stages					
2.	Design change					
3.	Inadequate review for drawings and contract documents.					
4.	Increasing scope of the project					
5.	Fluctuation in the cost of material.					
6.	Unpredictable weather condition					
❖ **Quality factor**						
1.	Quality assurance training					
2.	Quality of material used in the project					
3.	In order to reach the required objective, individuals must have the necessary educational qualifications and experience.					
4.	Lack of required monitoring and evaluation					
5.	Fulfilling the minimum standards to assure the quality of specific project task.					
❖ **Performance of Project manager (leadership)**						
1.	Qualifications and experience in project management					
2.	Project management skill in terms of project team selection					
3.	The competence of a project manager to plan the project activities					
4.	Determining the project to be executed based on environmental and political consideration					
5.	Project manager's communication and coordination abilities.					

6.	Commitment to achieving the cost, quality, and timeliness goals					
7.	Project manager's risk assessment and contingency planning skills.					

Thank you for your cooperation!!!