SCHOOL OF COMMERCE

DEPARTMENT OF BUISNESS LEADERSHIP

Assessment of the Site Supervision leadership: the Case of Supervision Contract Administration Office (SCAO) projects of Ethiopian Electric Power (EEP)

A Thesis submitted as in partial fulfillment of the requirements for the award of the degree of Masters of Business Leadership

Prepared By: Yohannes Hailu

Advisor: Wubshet Bekalu (PhD)

April 2023

Addis Ababa, Ethiopia

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STATEMENT OF DECLARATION

I, Yohannes Hailu, have carried out a research project on the assessment of the site supervision leadership: the case of Supervision Contract Administration Office (SCAO) projects of Ethiopian Electric Power (EEP) independently in partial fulfillment of the requirement for the award of Master's degree in Business leadership with the guidance and assistance of the research advisor, **Wubshet Bekalu (PhD)**. This study has not been presented for a degree in any other university and all sources of materials used for the study have been duly acknowledged.

Yohannes Hailu: _____ _____

Signature Date

LETTER OF CERTIFICATION

This is to certify that Yohannes Hailu has carried out his thesis work on the topic entitled "assessment of the site supervision leadership: the case of Supervision Contract Administration Office (SCAO) projects of Ethiopian Electric Power (EEP)" under my guidance and supervision. Accordingly, I here assure that his work is appropriate and standard enough to be submitted for the award of Master of Arts Degree in Business Leadership.

Approved by the Board of Examiners

_____	_____	_____
Advisor	**Signature**	**Date**
_____	_____	_____
Internal Examiner	**Signature**	**Date**
_____	_____	_____
External Examiner	**Signature**	**Date**

_____

Chair of Department or Graduate Program Coordinator

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First and foremost, I would like to express my gratitude to God, who has been present in my life unconditionally, not just in this study or research, and then to my Advisor, **Wubshet Bekalu (PhD)**, for his follow up and constructive comments during the entire process of this study. Furthermore, I would like to thank my friends and colleagues at EEP, who have willingly shared their precious time and filling out the questionnaire. Finally I would like to thank my family and friends who have been supporting me knowingly or unknowingly throughout the entire process of this study.

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ABSTRACT

Leadership determines whether a nation, an organization or a group will be achieving its goals and also satisfy the followers' needs. This study focused on the assessment of the site supervision leadrship: the case of Supervision Contract Administration Office (SCAO) projects of Ethiopian Electric Power (EEP). To assess and find out the site supervision leadership in the office, the researcher used the design methodology of quantitative approach methods. The primary data were collected to achieve the intended research objectives using a self-administered questionnaire survey. The secondary data were collected in a face to face request for the concerned body. Out of 70 questioners sent for office and site supervisor engineers, allocated at different projects of SCAO of EEP, 61 were fully filled and returned. Descriptive statistics using Statistical Package for Social Sciences (SPSS) Version 26 were used to assess the site supervision leadership. As per the result obtained from the descriptive analysis site supervision performance has (Mean=4.062, SD=0.83), delayed document delivery (Mean=4.16, SD=0.759), stakeholder relationship (Mean=3.93, SD=0.667) and leadership (Mean=3.108, SD=0.747). Generally, this study indicated that there is a positive and significant relationship between the overall site supervision and the site supervision leadership. Hence the study recommends that SCAO of EEP shall better give attention for the variables indicated in this study together with the unforeseen other variable which they are not included in this study for the sake of better site supervision leadership within the office.

***Keywords**: site supervision leadership, site supervision performance, SCAO, EEP*

List of tables

List of abbreviations

EEP - Ethiopian Electric Power

SCAO – Supervision Contract Administration Office

SSP – Site supervision performance

DD – Document Delivery

SH- Stakeholder relation

EL –leadership

TSC - Transmission and Substation Construction

SPSS - Statistical Package for Social Science.

SD. - Standard Deviation

EELPA - Ethiopian Electric Light & Power Authority

EEA - Ethiopia Electric Authority

EEPCo – Ethiopia Electric power cooperation

CEO – Chief Executive Officer

AHP - Analytical Hierarchy Process

QPMTF - Quality Performance Measurement Task Force

CII - Construction Industry Institute

FIDIC – Federation Internationale des Ingenieurs - Concseil

CoPA – Control of Pollution Act

PPA - Public Procurement Agency

CPM - Critical path method

GCC - General condition of contract

SCC – Special condition of contract

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Site supervision, according to Mustapha (1990), is the general direction, coordination, and oversight of the work processes carried out on-site. It is beneficial for the building's owner to comprehend the financial aspects of the project as well as the technical aspects of what is happening at the construction site. Knowing whether the building is perfectly in accordance with the blueprints, drawings, and designs given to the contractor or labor is also helpful (https://www.makemyhouse.com/).

A wide concept, leadership can signify different things depending on the situation. Various sources have provided the following examples of leadership:

The act of leading a group of people or an organization, the status of being in a leadership position, or the leaders of a group of people, a nation, etc. (Oxford Dictionaries)

The ability to execute strategic objectives, align people's individual and collective goals, and continuously refresh an organization all require a certain set of behaviors known as leadership. (www.mckinsey.com)

Business leadership is the ability of an organization's management to define and achieve hard goals, move swiftly and decisively when necessary, outperform the competition, and motivate employees to perform to the best of their abilities. (www.investopedia.com)

Construction of power plants, power transmission and substations, wholesale electricity sales, compliance research, design work, and survey work have all been delegated to Ethiopian Electric Power. For the purpose of attaining its goals, EEP is organized and divided into units. The engineering business unit, for example, has six offices run by directors. After receiving approved contract documents, drawings, letters, geotechnical data, and other items not specifically mentioned here from the design office, the Supervision & Contract Administration Office (SCAO) is among these offices and is in charge of site supervision as well as contract administration of all transmission and substation project constructions.(www.eep.com.et). The

contractor, who is one of the stakeholders, is in charge of submitting the proposed design for approval to the company's design office.

Therefore, this study can examine how the various knowledge and abilities of SCAO site supervisors affect leadership, as well as how relationships between stakeholders (contractors, subcontractors, suppliers, clients, etc.) can affect leadership. Finally, the study will examine the effects of recently delivered contractual documents (signed contracts, issued letters, approved design drawings, geotechnical reports, and other documents) on leadership.

An individual who oversees a building site is known as a site supervisor. (www.zippia.com). The project's site supervisors play a big part in keeping costs down, lowering risk and accidents, and boosting production. Additionally, it is important for construction supervision to focus on assuring high-quality work while not ignoring legal considerations (Ir. Dr. Justin LAI Woon Fatt 2023). When faced with challenges, a competent manager needs to be able to "make things happen." This is sometimes referred to as having "problem-solving skills," but it also involves being creative and thinking "outside the box"—being imaginative and spotting answers that others simply don't (Thomas and Zavrski, 1999).

To ensure that work is done on the site safely and without health concerns, site supervision is required. The most significant supervisory position on a building site is played by the site manager in the construction sector (Styhre and Josephson, 2006). Trench collapses, building collapses, and injuries caused by falling tools, debris, and equipment have all occurred as a result of improper construction site management. It has become increasingly obvious that construction site managers must comprehend the guidelines established in order to effectively supervise sites (Danso, 2005). Decisions may be made that result in incorrect work being completed and therefore inadequate oversight when the contractor or consultant lacks expertise in a particular aspect of the construction process (Thomas and Zavrski, 1999).

One of the key elements for effective innovation is communication between stakeholders (Dulaimi et al., 2003). High levels of coordination and integration between these stakeholders are necessary for a project to be completed successfully (Malkat and Byung-GYOO 2012). According to Alwan et al. (2017), the construction industry is still quite fragmented and avoids teamwork and strategic thinking. According to Bhatija et al. (2017), the fragmented character of the construction industry involves several players with varying

points of view. External stakeholders are those who are not technically members of the project coalition but who can significantly influence or be affected by the project. Internal stakeholders are those who are formally members of the project coalition and hence typically support the project (Beringer et al., 2012) (Aarseth et al., 2014).

Stakeholders must interact with other project stakeholders to ensure that the project's goals and objectives are realized while also taking into account their opinions, impacts, and concerns (Bourne and Walker, 2008).The project development process has had to be thoroughly reexamined by stakeholders as a result of criticism of the construction industry's low efficiency and productivity (Gibb & Isack, 2003). The implementation of development initiatives is increasingly being influenced by external stakeholders, according to Olander and Landin (2008). In addition, Nash et al. (2010) assert that special attention must be paid to the administration and involvement of the numerous outside stakeholders who may have a favorable or unfavorable impact on the general success of a building project. As a result, stakeholders exhibit a variety of behaviors that, depending on the perspective of the observer (Bourne and Walker, 2006), may be viewed by project management as either productive or detrimental.

Everyone agrees that delays in construction projects are a problem (I. Mahamid, A. Bruland, and N. Dmaidi, 2012). Nobody is exempt from project delays, whether they are little or huge building projects, or part of industrialized or emerging economies. There are various types of construction delays that can jeopardize a project's success. Construction delays have been classified by many authors as preventable (non-excusable/non-compensable) and unavoidable (excusable/compensable), critical and non-critical, concurrent and non-concurrent delay, and critical and non-critical (Hamzah et al., 2011; J Constr Econ Build - Conf Ser 2013). Time overrun is ultimately a cost overrun, which is one of the key performance metrics for a project, according to Memon et al. In the construction sector, delays can result in a variety of problems, including litigation, cost increases, additional project delays, decreased productivity, financial losses, and contract failures (Sambasivan et al., 2007; Tumi et al.). Trauner claims that because they raise project costs, delays have a negative impact on the interests of project stakeholders. The success profile of the majority of projects is thought to be negatively impacted by delays (AlSehaimi et al. 2013, Azhar et al. 2016).

According to the literature analysis, the abilities of various site managers to handle their workload vary. This largely depends on the talent and knowledge they possess. On the other side, managing stakeholder interests on site is another crucial concern. As we can see from the review, they have a wide range of interests. Therefore, they should have improved their communication skills on site in order to manage such a gap. Finally, it has become clear that delays in construction projects are a major problem for all kinds of construction. The most typical problem in the building industry is this one, and it can only be minimized. The original delay may have been brought on by a stakeholder's side or by many other contractual difficulties. For the purpose of this study, we shall disclose the delay that will result from SCAO office's delayed transmission of contractual documents to the project site.

However, at the conclusion of the study, this thesis work can serve as a source of information for current and upcoming Supervision & Contract Administration Office (SCAO) employees as well as a guide for businesses that operate in a comparable industry.

The research will employ a quantitative research technique along with a descriptive research design strategy for data analysis.

The research will essentially be conducted by taking into account the goals of "evaluation of the impact of site supervisor performance," "analysis of the impact of delayed document delivery," and "Study the impact of the relationship of stakeholders" on the site supervision leadership.

In order to determine the impact of site supervisor performance, stakeholder relationships, and delayed document delivery on the site supervision leadership at the Supervision & Contract Administration Office (SCAO) of Ethiopian Electric Power (EEP), we will use a quantitative research approach in this study.

1.2 Background of the Organization

Population expansion, urbanization, and the urgent need for infrastructure are all expected to fuel rapid construction growth. In order to meet the rising demand for the corresponding fundamental needs, construction projects such as roads, housing facilities, electricity and water supply systems, telecom infrastructures, and others, must be constructed. As a result, Ethiopia is currently struggling to provide the economy with industries and infrastructures through venture megaprojects, which would require significant financial resources and political considerations.

Ethiopian Electric Power is a producer of electric power that is owned by the government of Ethiopia. The business develops, invests in, builds, operates, and manages power facilities, as well as produces and transmits electricity.

The Ethiopian Electric Light & Power Authority (EELPA) was the company's original name, and it was founded in 1956 with the goal of providing the entire nation with power. The Ethiopian Electric Authority (EEA) and Ethiopian Electric Power Corporation (EEPCo) were formed after a protracted separation in 1996. EEA as a business absorbs all regulatory requirements and EEPCo by combining all operations from production through delivery to the customer's house. Later on in 2013, EEPCo divided into Ethiopian Electric Utility (EEU) and Ethiopian Electric Power (EEP), two separate companies.

The activities of Ethiopian Electric Power, which are carried out by the state-owned sister company Ethiopian Electric Utility, do not include the distribution of electricity or the operation of power transmission lines for 66 kV and below inside the national power system.

1.3 Statement of the Problem

Growth is impacted by infrastructure in a number of supply- and demand-side channels. Growth is directly impacted by investments in the energy, telecommunication, and transportation sectors because all forms of infrastructure are necessary for the creation of products and services. Infrastructure may also boost competitiveness, remove productivity barriers, make it easier for people and commodities to move around physically, and lower the cost of delivered items. (http://blogs.worldbank.org/). Large-scale projects like bridges, roads, communications, sewage systems, and power are among the various kinds of infrastructure investments that have a significant impact on the development of a nation. Ethiopia, like other growing nations, has a variety of large-scale projects, including current Mega projects, to help the government carry out its various growth plans. These projects are mostly held by the government, the public, and private citizens. Megaprojects are often significant transformational initiatives that touch and involve a wide range of stakeholders with various interests. They typically cost more than $1 billion to create and take a long period. (Flyvbjerg 2014).

Of these different project sectors it is well known that the energy sector development has been

considered as one of the strategy that would enable Ethiopia to meet the growth plans set forth. In this regard it is the role of the Ethiopian Electric Power to construct new power generation plants as well as the transmission line and the substation for the purpose of delivering the generated power to the national grid from which the energy management will be done. (www.eep.com.et).

The various large-scale projects of Ethiopian Electric Power (EEP) should go through various project phases, which the Construction Management Association of America (CMAA) defines as: pre-design (initiation), design (planning), procurement, construction and monitoring, and post-construction (closure), in order to achieve such growth plan strategy through the energy sector. (https://www.cmaanet.org/outline-cm-functions). It is common knowledge that supervision will begin after the start of the work among these project phases. In order to fulfill their obligation alongside other stakeholders for all issues and impediments that will occur at the site, the acting by site supervisor will be followed. Upper-level management frequently assigns the line-level or site supervisor/foreman the duty of overseeing construction site safety (Swuste et al., 2012; McVittie et al., 2009; Mohamed, 2002). As a supervisor, you must physically resolve issues including contractual conflicts, balancing the interests of many internal and external stakeholders, and other delay-causing problems. However, in addition to onsite follow-up, leaders at the office handle the various responsibilities of site supervisors. As a result, this research will evaluate the site supervision leadership in SCAO of EEP by taking these difficulties into account.

In order to answer the assessment through the descriptive way of design, the research will later use a quantitative approach to evaluating the leadership of the site supervision. The research will examine if the leadership of the site supervision will be impacted by the performance of the site supervisor, delayed document delivery, and stakeholder relationships at the conclusion.

1.4 Research Questions

Now on wards the researcher on this research will investigate for the following questions:

- How does the site supervision performance affect the site supervision leadership under projects of supervision contract administration office (SCAO) in Ethiopian Electric power (EEP)?
- How does delayed document delivery affect the site supervision leadership under projects of supervision contract administration office (SCAO) in Ethiopian Electric power (EEP)?
- How does stakeholder's relationship impact the site supervision leadership under projects of supervision contract administration office (SCAO) in Ethiopian Electric power (EEP)?

1.5 Research Objectives

1.5.1 General objective

The general objective of the study is to assess the site supervision leadership on the Ethiopian Electric Power at supervision contract administration office.

1.5.2 Specific objective

- Evaluate the impact of performance of site supervisor on the site supervision leadership under projects of supervision contract administration office (SCAO) in Ethiopian Electric power (EEP).
- Analyze the impact of delay delivery documents to site on the site supervision leadership under projects of supervision contract administration office (SCAO) in Ethiopian Electric power (EEP).
- Study the impact of the relationship of stakeholders (consultant, contractor and client) on the site supervision leadership under projects of supervision contract administration office (SCAO) in Ethiopian Electric power (EEP).

1.6 Significance of the study

The findings of this study may help in indicating and how to be effective leader that might be generated from site supervision performance as well as other reasons that directly impact site supervision activities. Basically the study expected to be an input for the intended office as well as for more such similar type of consulting firms.

As a contribution the study mainly focuses and provides new & more information for filling different gaps for leaders from different perspective. Finally, this study will add to the body of knowledge on the subject with different dimensions:

- Indicate how effective leadership can solve any problem at site.
- It will indicate directions how to solve once they have created.

1.7 Scope and Delimitation of the study

This study is delimited in the following perspective:

- From area point of view the study delimited only to the assessment of the site supervision leadership that is observed in SCAO office of Ethiopian Electric Power (EEP).
- From time perspective the study delimited only until the respondents replied the questioner and for any change later after that doesn't addressed and included in the study.
- It is used only quantitative method of approach with descriptive research design.

1.8 Organization of the study

According to the guidelines Addis Ababa University provides for writing master's and doctoral theses, this study is divided into five chapters.

The first Chapter serves as an introduction and can be thought of as the study's structure. The background of the study, the history of the organization, the statement of the problem, the fundamental research questions, the study's objectives, its significance, the scope and delimitations, and finally the study's organization are all included in this chapter.

The leadership of site supervision, on-site supervision performance, and a detailed analysis of the study's overall concept are all covered in the second chapter's literature review.

The third chapter will then be delivered, covering research technique and outlining the study's presumptive research design, while chapter four focuses on the analysis and presentation of both qualitative and quantitative data.

The fifth chapter concludes with summary, conclusions, and recommendations based on the study's key findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 LEADERSHIP & SITE SUPERVISION PERFORMANCE

2.1.1 Introduction to Leadership

Theories of leadership have existed since the beginning of the 20th century. The first theories, referred to as "Great Man theories," were created around 1900. According to this notion, having the ability to lead comes naturally to some people. In the years that followed, in 1930, the Group Theory was put forward, which explained how leadership forms and grows in small groups. The idea that all leaders share certain universal features was represented in the development of trait theory between the years 1940 and 1950. The other approach, known as behavior theory, emerged between 1950 and 1960.

This approach focuses on the essential behavioral traits that produced leadership. Another hypothesis, called as Situational or Contingency theory, was put forth between 1960 and 1970, sometime after this one. Its key issue with reference to leadership is which leadership practices work in particular circumstances. The other excellence hypothesis was created in 1980 and is based on the idea that people may lead organizations to excellence by interacting with their attributes, external circumstances, and group facilitation.

Following the discussion of the aforementioned theories, additional theories of leadership were also put forth and discussed, primarily by other researchers in the fields of management science and social psychology. However, these theories were restricted in scope, excluding theories of leadership that emerged in other fields, such as philosophy, history, and the arts. Hierarchical, linear, patriarchal, pragmatic, and Newtonian perspective views predominated in these theories.

Other fields added other dimensions in the concept of leadership. Such as;
Anthropologists – Culture
Historians – Long time frames,
Political scientists – Political power
Sociologists – Institutions and societies

Leadership was described as "infusing the values and purpose of leaders into a group" by a variety of political sociologists in the year 195.7. Leadership, according to Robert Greenleaf, is "great leaders helping the people they are in charge of by fostering an environment that supports everyone in reaching their full potential." (2007) Greenleaf

James M. Burn, a different scientist, stated in 1978 that "followers are the central parts of leadership" since they are deeply involved in power exchanges and have independent thoughts.

2.1.2 Different definitions of leadership

It might be difficult to discuss leadership with a single working definition because it can be defined in so many different ways. Leadership refers to more than just a person or team assigned to a prominent role. Simply said, leadership is the process by which a leader engages in a variety of activities to accomplish any objective. A leader's behavior or attitude in gathering and guiding others toward a goal is referred to as leadership. Leadership is a process of communication between a leader and followers. As a result, the efficiency of any organization depends on its leaders, and strong leaders possess effective leadership styles. It is well acknowledged that leadership plays a crucial role in every organization or group.

There are numerous ways to define leadership; here, the three most well-known approaches are presented:

a) **Target accomplished through others**: While many leaders have worked hard to guide their teams to success, this accomplishment would not have been possible without the participation of every team member. The actual definition of leadership, which includes those assisting hands, should therefore be set up. In the past, leaders have used hierarchy and the giving of orders to carry out the assigned mission. However, the leaders of the modern era developed a new strategy and modified it to the investment of trust to their people, with skilled workers cooperating in a pleasant working environment to achieve the goals. Management techniques are typically preferred in businesses above leadership types. This style of leadership effectively disallows position-less management and warmly promotes casual management. The only modification is that you no longer grant members with positive powers.

b) **Dominating power of leadership:** In this style of leadership, the person who dominates and stands out in a group or team is referred to as the group's or team's leader. Simply said, it clarifies that a leader is someone who has authority over his followers by keeping a position of power for an extended period of time. In order for this situation to exist, everyone involved must agree that they will follow the rules. It is not necessary to be a strong motivator or relational leader of the people under this form of leadership.

c) Positive change in the direction of a better journey: In this kind of leadership, the main goal is to question the status quo in the direction of a better world. Leaders are believed to have the fortitude to speak up and be heard even when doing so puts them in danger. However, in this kind of leadership, you are not required to occupy a formal position; rather, you can question the status quo if you feel that change is necessary. These things can also give workers the chance to take command even though they lack the necessary skills or authority.

2.1.3 Types of leadership behaviours

Different leadership styles might be crucial for a company. The framework adopted by Hart and Quinn (1993), who concentrated on the CEO's functions, They assert that in order for a business to be effective, the CEOs must carry out four important functions.

These jobs include motivator, analyzer, taskmaster, and one who sets the organization's vision. Each of these roles has constructive responsibilities. A company's basic purpose and future direction are clarified and presented by the vision setter, who performs the first function, while keeping an eye on new social, economic, and technological changes.

A "cause worth fighting for" is created by the motivator in the second role, which involves translating or shifting an organization's vision and business plan. The CEO must stimulate staff members to attain the objectives of the company in order to fulfill this function. The analyst, the third job, is responsible for managing internal operating systems effectively, influencing operational choices, and overseeing managerial procedures. The fourth and final function, the taskmaster, concentrates on the performance and obligations of the association through influencing subordinates' decisions and assigning resources to the most important tasks. An effective executive can play all four of the aforementioned roles at once, displaying a high level

of behavioral complexity.

Leadership is not just a personality quality that comes naturally. Different types of leaders exist. For instance;

Strong authoritarian leaders: These are the ones who set their objectives without asking their followers' opinions and then demand that they carry out the tasks they have been given without question.

Consultative leaders take their teams' suggestions and opinions into account when establishing goals. They hear what others have to say, but they don't consider it while making a decision.

Democratic leaders: These are those who actively participate in the decision-making process with their team members.

Leaders with charisma establish a sense of unity between their followers or a desire to resemble the other person; the more the attraction, the greater the leader's influence. (Harris and House 1999; Bass 1990)

Face saver: These leaders guaranteed everyone's safety and security while they were following them**.**

Leaders who are very relaxed are referred to as **laissez-faire leaders**. The group's leader who gives the group members the freedom to take whatever action they deem necessary.

Most academics have recently examined the effects of charismatic leadership and transformational leadership on organizational effectiveness. Conceptually, charismatic leadership and transformational behavior are related. According to (Shamir House and Arthur 1993), charismatic, visionary, or transformational leadership is said to have impacts on followers that are both numerically and qualitatively higher and different than those isolated in earlier models. According to Canella and Monroe's 1997 description, transformational leadership places more emphasis on the value of connections between leaders and their followers than the agency theory of leadership does. Expressing a vision, making sense of missions, demonstrating tenacity, and conveying high performance standards are among the key personal behaviours of charismatic/transformational leaders. The benefits of charismatic or transformational leadership behaviours on followers include building followers' trust in the leader, making followers feel good in the leader's presence, and gaining strong regard or admiration from staff (Conger & Kanungo 1987). The motivating of their followers through rewards or punishment, on the other

hand, is the emphasis of transactional leadership behaviors. According to Burns in 1978, transactional leadership refers to a give-and-take relationship that serves the self-interests of the exchange parties. The primary goals of transactional leadership behaviors are the maintenance and oversight of organizational operations.

These leadership traits define the organizational strategies that will be pursued, create the framework for their execution, focus the efforts of subordinates, and remedy any errors or deviations from standards. Such acts are directed at improving organizational performance, either by directly addressing activities or by influencing the followers' behavior. There is no doubt that transactional and charismatic/transformational leadership include two distinct behavioural styles. The first focuses on the duties or performance of the company, such as planning, outlining the organization's vision or goals, keeping track of subsidiary activities, and providing the appropriate resources, tools, and technological support. The other, or the second, focuses on relationships with employees and includes being supportive and helpful to subordinates, showing trust and confidence in employees, being amiable and considerate, attempting to identify problems with subordinates, showing understanding for a subordinate's ideas, and expressing gratitude for subordinates' contributions and accomplishments (Yukl 2002). In reality, the task- and relationship-oriented behavior conflict of leadership first surfaced during early research at Ohio State University and the University of Michigan (Stogdill 1974).

2.2 Introduction to site supervision Performance

2.2.1 Supervision in the construction concept

In general, supervision refers to the act or responsibility of watching over something or someone. A person is a "supervisor" if they do supervisory tasks professionally, even if they do not hold the official title of supervisor. The "supervisee" is the one who is conducting the supervising. (Wikipedia).

Construction supervisors oversee projects' construction and keep an eye on everything at the job sites. They oversee the work of crews, ensuring that health and safety regulations are followed, and guarantee that projects are completed on time. Additionally, they assist with contract creation, communication with vendors and subcontractors, and other administrative duties. (betterteam.com)

Construction supervision is the ongoing monitoring, auditing, and planning of the projects to ensure that they are completed on time, professionally, and with the necessary tools to ensure acceptable quality in accordance with the approved papers, rules, project timeline, and other requirements. (Law Insider)

2.2.2 Construction supervision tasks

2.2.2.1 BEFOR-CONSTRUCTION PHASE

Later after the sign of the consultancy service contract and prior to the commencement of the Work, the consultant shall focus on the following but not limited.

- **Mobilization and work initiation**

The contractor starts mobilizing the necessary machinery, personnel, construction material and other to the site.

- **Preparation/review of construction supervision manual**

The supervision manual comprises forms or format for the control of quantity & quality materials, cost and time of the project. There are different Standard Contract Supervision forms/format that can be used for supervision purpose at the construction site. For example forms for minutes of meeting, site handover, and so on.

- **Data collection and reconnaissance survey**

If necessary, the information can be gathered from the design reports and/or by site observation. The information/data of particular relevance could be:

- Information on topography and climate, including monthly rainfall statistics and topographic maps, reference markers, and beacons/pillars;
- Soil, construction materials, and foundations (access to regional resources, availability of materials, and physical properties, strength, chemical composition, and transportation system);
- Environment condition (Special Problems/Erosion, Subsidence, Slope Stability, Flooding/Submergence);
- Social difficulties surrounding the project;

- Rivers/Locations, HFL, Bed Characteristics, and Foundation Design Parameters; Water Source and Type;

➢ **Review of engineering design and reports**

The team should review and check the adequacy and soundness of the design prepared with the actual site condition and up to date the design parameters. This will greatly help the team in acquainting him/herself with the design and also gives an access for amendments/ changes to entertain conditions that were unforeseen during the design stage.

✓ Review engineering surveying report

At the start of commencement of the supervision service, supervisor engineer should identify and verify all the survey ground control stations, beacons and benchmarks previously established during the design phase. In so doing, the supervisor engineer should perform the following activities prior to commencing any construction survey.

- Verifying the competence of surveyors supplied by the Contractor,
- Identification and checking of all reference points and bench marks based on the data on the engineering drawings and documents prepared during design stage (phase I),
- Correct, as required, ground control stations based on the outcome of ground control survey,
- Re-establishment of missing stations and benchmarks including placing of concrete posts well fixed into the ground, and
- Verifying that benchmarks and reference points are being protected.

✓ Review of technical specifications

The technical Specifications should be reviewed in detail that forms the contract in order to assess the suitability and completeness and suggest, as required, the necessity for additional specifications for the works.

✓ Review of drawings

To ensure that the drawings are consistent with the technical Specifications and that the method of measurement is clearly recognized in the Bill of Quantities the drawings should be checked for the respective items of works.

✓ Review of bill of quantities

The CST should review the Bill of Quantities in reference with the reviewed plans, drawings and technical specifications to check the accuracy and ultimate verification indicated in the work Contract Document.

- ✓ Review of the contract document

Under this scope the consultancy team should check and review the Contract Agreement, Letter of Acceptance, Contractor's Bid, Conditions of Particular Application, General Conditions of Contract, Particular Specifications, Standard Specification, The Drawings, Priced Bill of Quantities, and Other Documents (Minutes of pre-contract award discussion, etc.)

- ➢ **Issuance and clarification of relevant documents**

The consultant should issue the contractor with all the necessary copies of the engineering drawings, technical specifications and contract documents before the site handover. These documents depicting the scope of work are legal documents which form an integral part of the contract and the contractor is required to perform the work in accordance with them.

- ➢ **Site Possession/handover the site**

Before handing over the site to the contractor, the consultant and the client should familiarize themselves with the site conditions by visiting and identifying the important features that shall be considered during the site handover event.

- ➢ **Notice to proceed contractor's mobilization**

The responsible supervisor should check that all legal conditions have been met and financial guarantees submitted by the Contractor before it is given notice to Proceed. If all the conditions are met, the Contractor shall then be given notice to Proceed in accordance with the time specified in the Works Contract.

- ➢ **Examining and approving the work plan and technique statement of the contractor**
- ✓ Contractor's work program

Prior to the start of construction of the permanent works, the supervisor should request the contractor to provide a Work Program including the deployment of construction equipment, person power and its method statement, supported by charts and/or tables.

- ✓ Method statement

A method statement used to control the work and assures that the crucial precautions have been communicated to those who have direct involvement in the construction. The method statement

should indicate when, how and by whom a specific construction activities and health and safety measures can be accomplished.

- **Soils and materials investigation**

The quarry sources, proposed by the Contractor, should be investigated exhaustively for the construction material and shall be near to construction site to minimize overhaul, to optimize the use of available construction materials or enhance economy.

2.2.2.2 DURING-CONSTRUCTION PHASE

The consultant's attention during this phase, which lasts from the start of the job until it is finished, shall be on the following but is not limited to them.

- **Health and safety**

The Contractor will be asked to create and submit his general safety policy as well as his method statement, which will outline the safety precautions he will take for each operation. The Contractor is required to adhere rigorously to its safety policy during each construction activity, and any situations when the safety policy is not followed must be brought to its notice.

- **Quality control**

The goal of quality control is to assist construction in achieving the high standard of quality outlined in the specifications by limiting the various factors that contribute to a decline in quality, looking into the causes, and suggesting solutions without impeding the flow of construction work.

The three phases of quality control are: (1) during material selection, (2) during material processing, and (3) Execution of works by means of testing; supervision during construction; and compilation, analysis and interpretation of test results. There are several items to consider regarding this quality issue:

- ✓ Quality control of construction materials

Since it is the basic elements of the permanent works, the quality of construction materials for the last longing service life as well as quality of the project is vital. Accordingly, the consultant team should establish a quality control system for production, test and handling of construction materials. The quality control system should also include testing of samples, visual inspection, or checking manufacturer standard product certificate.

- ✓ Quality control of workmanship

Prior to issuance of approval to commence new activity or proceed with following activities, the supervisor should check Contractor's setting out and other preparations for the Works. Frequent quality control tests, as included in the technical Specification, shall be run on the works to check compliance of the workmanship to the Specification.

- ✓ Inspection of works and approval

Once the contractor has started to implement the works the supervising body should regularly visit the site to inspect the quality of works and give approvals before the contractor can proceed with certain critical activities. For the sake of follow up sample "Works Inspection Forms" should be developed.

- ➢ **Schedule control**

Supervisor engineer should control construction time and progress by identify and monitoring key dates in the project life Time. S/He should note on the field calendar every date that has special significance on the project, whether it be for test, special inspections, payment request due date, delivery date, or other important milestones. All such data should be obtained either from the specifications (if listed there) or from the contractor's works schedule.

- ➢ **Cost control**

Cost as like one of the three dimensions of construction projects it needs to be controlled by the supervisor engineer. There are different payments during the construction phase of the project, here below listed:

- ✓ The contract price

It is the total price offered by the employer for the execution the whole project activities which accepted by the employee.

- ✓ Currencies of payment

It shall be specified on the special condition of contract forming the Contract.

- ✓ Advance payment

Prior to commencement of work the Employer will pay an advance payment later after the Contractor submits a guarantee in accordance with GCC/SCC forming the contract.

- ✓ Interim Payment

Interim payments to the contractor usually approved and resulted from the supervisor engineer's submission to the employer of a document called an "Interim Payment Request".

- ✓ Final payment

The contractor must request final payment once the certificate of completion or significant completion has been issued. The contractor will receive one final progress payment after deduction for retention, which will be made after notice of completion (Substantial Completion).

- ✓ Retention money

This money involves some portion of total contract money of the contractor. The purpose of the retention money is to be utilized by the surety to complete the work in the case of uncertified/corrected default by the contractor.

- **Environmental protection monitoring**

Environmental and social impacts mitigation measures should be proposed in detail by supervisor and later implemented by the Contractor during execution of the Project Works. The supervisor should control different environmental interventions to minimize adverse impacts on biological environment, alleviation of noise, vibration and dust, and others.

2.2.2.3 AFTER-CONSTRUCTION PHASE

- **Final inspection and testing**

The final inspection and testing will be carried out as part of the procedures for handing over the completed project to the client. Once the contractor has completed the entire contract work, or an agreed part of it, he/she should notify the supervising officer and request for a final inspection.

- **Final report**

Final report is also known as Contract Completion Report. On the completion months of construction, contract completion report shall be prepared and submitted to Client.

- **Consultancy completion report**

Following submission of the Contract Completion Report, the engineer from the consultant team prepares a comprehensive report on the Consultancy services throughout the contract period. The report shall describe the aims of the project and the achievements of the construction works.

- **Final payment certificate**

The Supervising body and the Contractor are required to conduct a joint inspection and take final measurements of the completed works in accordance with acceptable guidelines for conducting such Final Inspection as soon as the works are substantially finished and provisional acceptance of the project or upon termination of the Contract (at an earlier stage). The contractor creates a

Final Payment Certificate and agrees with the Supervising body based on the final measurements and As-Built Drawings.

- **Payment of retention money**

A portion of the retention money specified in the Works Contract must be certified by the supervisor for payment to the Contractor upon the issuance of the Certificate of Substantial Completion and provisional acceptance of the project. The balance of the retention money must be verified by the engineer for payment to the contractor when the final taking-over certificate is issued and the Defects Liability Period has passed.

2.3 Construction Performance & its Measure Models

If we are to reflect on consideration on the linguistic structure of the word, the oxford English dictionary takes performance to be as how nicely or badly you do some thing or how right or badly something works, it is additionally defined as the act or approach of performing a task, an action, etc. whilst the verb function capability to work or feature properly or badly.

- Through specialized literature, students persistently assert that there is no single, agreed-upon definition of performance and contend that it is a multifaceted concept. Tatjana Samsonowa (2012) contends that despite this, there is one commonality among all the specific definitions she had to review in the literature on the overall performance dimension. They are all related to the terms effectiveness and efficiency, with effectiveness serving as an indicator of the degree of a goal's attainment and effectivity serving as an indicator of the resources that had been used to achieve the degree of achievement. Here are some of the definitions she used to base her judgments:-

- According to Venkatraman and Ramanujam (1986), any strategy's performance is tested over time.
- According to Cordero (1989), effectiveness is the measurement of output to see if it contributes to the achievement of goals. Efficiency is the measurement of resources to see if only the bare minimum is needed to produce certain outcomes.
- According to Lebas (1995), performance is about effectively deploying and controlling the causal model's elements, which results in the timely achievement of stated goals under circumstances that are unique to the organization and the scenario.

- Neely et al. (1995): The effectiveness and efficiency of deliberate action
- According to Rolstadas (1998), performance is the intricate interaction of even performance criteria, including effectiveness, efficiency, quality, productivity, work-life balance, innovation, and profitability/budget-ability.
- The degree to which an objective is attained, according to Dwight (1999).
- According to Hoffmann (1999), "performance" refers to an individual's assessed contribution to the accomplishment of organizational objectives. Any strategy's ability to perform over time is tested.

The systematic approaches to basic performance measurement have an impact on various building/construction enterprises, governmental sectors, public and private clients, and unique challenge stakeholders in the contemporary development industries. The common project of gathering and disclosing information about the inputs, efficacy, and effectiveness of development projects is called performance size.

To improve program efficiency and effectiveness in their organizations, they use performance measurement to assess the performance of their projects in terms of both financial and non-financial factors as well as to compare and contrast the performance with other projects. Furthermore, according to Steven et al. (1996), measurements are necessary to track, forecast, and ultimately manipulate those variables that are crucial to the success of a project. Many researchers and practitioners have concurred with this statement (Sinclair and Zair, 1995; Mbuga et al., 1999; Love et al., 2000; and Chan, 2001).

More specifically, Kelada (1999) contends that performance measurements should encompass high-quality management, customer satisfaction, needs, wishes, and expectations, which include the three stakeholders of shareholder, client, and employees, in addition to practicing product or company excellence and business performance. The measurements may be divided into three general categories. The first dimension deals with quantitative or numerical measures, the second with qualitative or subjective measures, and the third with what and whose performances are to be measured. To identify the fashionable, the results must be in contrast to the anticipated effort and reference cost (Sinclair and Zair, 1995; Stevn et al., 1996; Atkinson, 1999; Mbuga et al., 1999; Love et al.,2000; Chan,2001).

There are several methods for gauging an undertaking's overall effectiveness in a variety of nations, including the United Kingdom, the United States, France, India, Hong Kong, Saudi

Arabia, and Malaysia. To quantify task performance, distinct performance variables have been developed in these various ways.

According to a review of the literature on the performance measurement models currently in use in the construction industry, there are several ways to categorize construction performance, including the following four: construction project performance, construction productivity, project viability, and project quality. These classes form the framework on which models have been created to assess the performance of building at numerous degrees of development.

The following are discussed:

- **Models for the Measure of Construction Project Performance**

The integrated performance index (Pillai et al., 2002) and key performance indicator (Construction Industry assignment Force, 1998) are the two models created by two separate authors to evaluate the performance of a construction assignment.

An indicator was created in India for the project R&D for the benefit of the overall performance dimension by Pillai et al., (2002). Based on their current real-world experiences with the management system, the Missile Development Programme established this gauge, known as the Integrated Performance gauge. Later, the building project performance assessment model identified three distinct investigational phases that focused on the overall performance components. These components include the stakeholders, the overall performance metrics, and performance indicators or important components related to each phase. Project execution, project implementation, and project selection are these three steps of an enterprise. Pillai et al. (2001) outlined eight key elements that must be taken into account when evaluating an R&D project's performance: benefit, risk, challenge preference, assignment status, selection effectiveness, production preparedness, cost effectiveness, and client commitment. An integrated overall performance index (IPI), which is based on the meaningful correlations between these essential components and the use of mathematical formulas to integrate them, is calculated.

The integrated performance index is useful because it can be used at all stages of the task life cycle to rank the project for selection, to evaluate project performance under the execution segment, and to serve as an input for the management of subsequent projects. Lack of clarity in the mathematical formulas used to combine the acknowledged important components into an

integrated overall performance index is one issue with the methodology. This model is no longer adequately obtained by practitioners as a result of this flaw.

The UK construction industry's reaction to Egan's record is the adoption of Key Performance Indicators (KPIs), which are used to assess project performances based on all 10 stated characteristics (Construction Industry Task Force, 1998). Project performance indicators and corporate performance indicators are the two broad classifications for this. The first indicator, called Project Performance Indicators, includes seven components: Construction Cost, Construction Time, Cost Predictability (Design and Construction), Defects, Customer Satisfaction with the Product, and Customer Satisfaction with the Service. The second indicator, called Company Performance Indicators, consists of three components: Safety, Profitability, and Productivity.

The strategy begins by developing the basic "key drivers for change," which include committed leadership, attention to customer demands, integration of the product team, a quality-driven agenda, and dedication to people. The key drivers' commitment to quality means that the final product must be delivered with zero faults, be accurate the first time, be delivered on schedule, under budget, and meet or exceed customer expectations. Definitions are developed using a radar chart and industry performance graphs as one of the KPIs. Companies can analyze their own results using the graphs by evaluating them and contrasting them with the radar chart, which serves as a straightforward performance scorecard. The benefit of this approach is that clients, designers, consultants, contractors, subcontractors, and suppliers can all easily comprehend and put the many concepts into practice. The model's inability to compartmentalize KPIs based on project phases presents one difficulty.

- **Model for Measure of Construction Productivity**

Computerized hobby sampling-CALIBRE technique is a tool used to develop productivity size of on-site performance (Winch and Carr, 2001). It focuses on the structural concrete component because that is the key factor affecting any building project's budget and schedule. The tool evaluates employee performance solely on the basis of job activity for a given task, at a specific location, at a specified time. It gauges the effectiveness of each assignment in terms of the ratio of inputs to outputs within the framework of the entire structural work schedule. Inputs are "available time," which is calculated using the man-hours of the located workers from CALIBRE's recreational sampling approach, and outputs are cubic meters of concrete provided

to the website online. The mapping of the development process, identifying the coding, monitoring the website (observations), and analysis, reporting, and feedback are the four basic stages of CALIBRE's recreation sampling system. This makes it possible to gather, analyze, and communicate facts to clients, contractors, and other stakeholders. The final results must demonstrate how well the trade contractors performed for that specific component. This methodology is appropriate for contractors to compare their total physical productivity performance to others and to increase project productivity. The concept behind the model appears plain and simple, but it still requires professional involvement to ensure that the records are accurate and genuine.

- **Model for Measure of Project Viability**

The Analytical Hierarchy Process (AHP), developed by Saaty in 1980, is one methodology that was started and developed to evaluate project viability performance. Pair-wise comparison is a key component of the multi-objective decision-making process utilized by AHP to assign weights and priorities to various project-related factors. Additionally, the method can be used to gauge the success of undertaking initiatives (Chua et al., 1999) and the initial viability of projects as investment opportunities (Alidi, 1996). The main presumption is that decision-makers are the ones who can organize a complex problem into a hierarchy, where each factor and alternative can be identified and compared to other relevant factors before ranking the priorities of the projects under consideration.

In addition, it makes it possible for thorough communication to develop between all teams working on a project, allowing for the gathering of a variety of strategic and tactical data. The Inter-Arab Gulf Industrial Company makes extensive use of this method to assess the initial project's viability. Prior to a thorough feasibility study, AHP enables financial and human resources to be allocated more effectively amongst projects (Alidi, 1996). There are four different levels in the developed project viability that AHP possesses. The first stage focuses on the cost assignment for unusual projects; the second stage identifies the stakeholders or businesses involved; the third stage identifies the groups' associated targets (budget, profit, productivity, science transfer, etc.), with weight assigned to each objective; and the final stage ranks the tasks under consideration, relative to each of the objectives. The results of the synthesizing process rank the projects according to how likely they are to succeed.

- **Model for Measure of Project Quality**

The three models can be used to assess the quality of construction projects. A framework for evaluating quality performance on engineer-procure-construct (EPC) projects in the United States has been developed by the Quality Performance Measurement Task Force (QPMTF) of the Construction Industry Institute (CII) (Glagola et al., 1992; Stevens, 1996); and the Quality Assessment System in Construction (QLASSIC) model, which was initially created by the Construction Industry Development Board of Ontario.

Chan (2001) used some empirical research on project critical variables associated with Hong Kong construction projects to establish a project quality performance model. Client, Project, Project Environment, Project Team Leader, Project Management Action, and Project Procedure are the headings under which the variables are categorized. The dependent variable (i.e., quality performance) is determined by the relationship between the aforementioned variables, which are typically regarded as independent variables. The customer variables simply distinguished between different types of organizations, whether they were in the public or private sector, if they could comprehend the project's goals, and how well they could be briefed, make choices, and define responsibilities. The utilization of project characteristics and external environmental factors is highlighted since they support the project process and serve as excellent benchmarks for judging performance quality. In general, it is anticipated that the managerial system (in terms of decision-making, selecting the best strategy, setting-up specific objectives, selecting people, delegating responsibilities, and evaluating results) and the procedures adopted during the construction process (in terms of the concept of procurement form and method of tendering) will have a significant impact on the quality of a project.

The relationship between the things on the list that affect quality performance was logically formed, and this clearly shows that various factors might contribute to an increase in customer satisfaction with the quality. These various factors include effective project management practices, the team leader's productive results, the viability and practicality of procedures, and the stability of the project environment. The model has a number of flaws. In general, the variables are not collected according to the project phase, and at each project phase, the model fails to define the roles, requirements, and expectations of project stakeholders.

2.4 Concepts and Definition of Stakeholder Management

2.4.1 Stakeholders

At various project stages, some stakeholders may play a more significant role than others. We can learn more about these stakeholders and what they anticipate from the next project by having enough time to use the stakeholder identification and mapping system. Prior to approaching stakeholders and requesting them to participate, it is crucial to identify the individuals you will be relying on during the project. The sharing of information with stakeholders is the other crucial issue; in the interim, it's also critical to collect data on stakeholders.

After the stakeholders have been identified, they must be mapped according to their influence and involvement in the project.

The project stakeholders can be included by using this stakeholder map. According to Walt (2016), the four main stakeholder groups for any project are as follows:

1. Stakeholders considered Internal;
2. Stakeholders considered external;
3. Members of the project team;
4. Supplier & Contractors

2.4.2 Project Stakeholders Management

In building projects, several scholars use various stakeholder management process models:

Karlsen 2002;

Selecting stakeholders, analyzing stakeholders' behaviors, connecting with stakeholders and exchanging information with them; developing techniques, building on

Young (2006);

identifying stakeholders, gathering data on stakeholders, and evaluating stakeholders' effects.

Elias and others (2002);

creating a chart of specific stakeholders, defining their interests, and creating a stakeholder map for the project creating a power versus stake grid, conducting transactional, process, and level stakeholder analyses, assessing changes in stakeholder interactions, and determining the R&D projects' stakeholder management proficiency.

Selecting stakeholders, prioritizing stakeholders, and developing a stakeholder engagement approach are all covered by **Bourne and Walker (2006).**

Cleland (1999) was adopted by Olander (2006);

Identifying stakeholders, gathering data on stakeholders, defining their missions, identifying their strengths and weaknesses, identifying their strategies, predicting their behavior, and implementing stakeholder management strategies.

Eskerod and Jepsen (2009);

choosing the important stakeholders, categorizing them according to their contributions that are required, their expectations regarding rewards for contributions, their influence with reference to the project, and choosing the technique to use to influence each stakeholder.

Walker et al. (2008); identifying stakeholders; ranking stakeholders; imagining stakeholders; including stakeholders; and tracking communication success.

2.4.3 Theories of Stakeholder Management

This study focuses on analyzing the impact of stakeholder management (SM) on project success by carefully investigating the SM process, which includes stakeholder identification, stakeholder planning, stakeholder management, and stakeholder monitoring. The instrumental, descriptive, and normative views of stakeholder theory as conceptualized by Donaldson and Preston (1995) must therefore be reviewed as supporting or underlying conceptions of stakeholder.

Instrumental Stakeholder Theory

According to the instrumental stakeholder theory, a company should concentrate its efforts exclusively on those stakeholders who have the potential to influence the business's value. Since only empowered stakeholders would be given a voice to ensure their contribution to the success of the business, this criterion indicates from the perspective of stakeholder management or governance (Spitzeck & Hansen, 2010).

Descriptive Stakeholder Theory

Without considering their authority or legitimacy, the descriptive approach categorizes and separates the numerous stakeholders in an organization (Spitzeck & Hansen, 2010). Indicative/empirical formulations of this stakeholder theory perspective outline how the organization functions in terms of stakeholder management (Pesqueux & Damak-Ayadi, 2005;

Mainardes et al., 2011) and describe and/or explain how organizations or their managers actually behave (Friedman & Miles, 2006).

Normative Stakeholder Theory

The normative perspective emphasizes the rights and obligations of the players engaged while taking into account the value and moral obligations of stakeholders whose interests are impacted by organizational behavior. It also considers how to strike a balance between the interests of different stakeholders (Spitzeck & Hansen, 2010). This theory (Friedman & Miles, 2006) explains how the management team should carry out its duties in terms of the recognized moral norms (Pesquex & Damak Ayadi, 2005; Mainaredes et al., 2011). It is centered on the moral propriety of the characteristics of organizations and/or their managers.

2.4.4 Theme of Stakeholder Theory

Many studies (Jawahar & McLaughlin, 2001; Mitchell et al., 1997; Rowley & Moldoveanu, 2003) that show how simply resolving stakeholder issues is related to the long-term sustainability of the business have emphasized on the managerial value of stakeholder management. Various specialized industries, including research administration (Bunn, Savage & Holloway 2002; Elias, Cavana & Jackson 2002), water utilities (Ogden & Watson 1999), and development venture administration (Bourne & Walker 2005), have been identified as using the stakeholder theory. The focus of construction management studies has typically been on organizing and overseeing the myriad of operations necessary to complete construction projects like roads and buildings (Morris, 1994).

According to Bourne & Walker (2005), if failure occurs, the result will be endless project failure. This thing happens due to stakeholder's resource and other capability to stop the construction project (Lim et al., 2005). If the managers of construction projects have the capability of how to manage the construction stakeholders' expectations and concerns it would be crucial skill (Vinten, 2000). Additionally, the achievement of stakeholder expectations is what determine if a project will be completed successfully (Cleland, 1995). Stakeholders comprise a variety of groups, including managers of the project, vendors, designers, subcontractors, financing organizations, clients, users, owners, employees, and local communities (Newcombe, 2003). As

a result, a group known as robust construction management literature has established a method for identifying and overseeing the relationships and interests of stakeholders.

2.4.5 Practical Guide of Stakeholder Management

The Project Management Institute defines and directs project stakeholder management, lays out the stakeholder management methodology, and addresses other SM-related topics. The practical guide to stakeholder management is covered below.

- **Management of Stakeholders**

The evaluation of stakeholder expectations and their impact on the project, as well as the development of effective management strategies for successfully involving stakeholders in task decisions and implementation, are steps that are essential for stakeholder management. These steps include becoming aware of the people, groups, or agencies that should have an impact on or be impacted by using the project.

The publications support the challenge group's efforts to assess stakeholder expectations, gauge the extent to which they influence or are influenced by the project, and improve strategies for effectively involving stakeholders in challenge decision-making and the planning and execution of the project's work.

- **Project Stakeholder Management Process**

i. Determine the stakeholders

The process of continuously identifying project stakeholders and assessing and documenting pertinent data about their motivations, levels of involvement, interdependencies, sway, and potential effects on project success begins with this phase. It will assist the project team in determining the appropriate factors for each stakeholder's or set of stakeholders' engagement. Every stage of the project undergoes this process on a regular basis as necessary (PMI, 2017).

ii. Plan Stakeholder Participation

Following stakeholder identification, the process known as plan stakeholder engagement entails developing strategies to involve project stakeholders based on their needs, expectations, interests, and potential impacts on the project. As a result, a useful graphic is provided to facilitate successful collaboration with stakeholders. According to requirements, this technique must be completed on a regular basis during each project phase (PMI, 2017).

iii. Control Stakeholder Participation

The third part of the process entails engaging with stakeholders to meet their needs and expectations, resolve problems, and use the proper stakeholder engagement techniques. This phase will benefit the project manager by increasing support and decreasing resistance from stakeholders. Every stage of the project must frequently go through this procedure as needed (PMI, 2017).

iv. Keep an eye on stakeholder involvement

The process of monitoring stakeholder participation is the last phase. It involves keeping track of interactions between stakeholders and altering engagement tactics and plans in response to those changes. As the project develops and its environment changes, this final stage either preserves or improves the efficiency and efficacy of stakeholder interaction duties. Every stage of the project must undergo the procedure on an as-needed basis (PMI, 2017).

2.4.6 Key Concepts for Project Stakeholder Management

Naturally, there are stakeholders in any project who have an impact or who have the potential to have an adverse impact. Some stakeholders may have some power to influence the work or outcomes of the project, while others may have a significant impact on the project and its anticipated consequences. The importance of a structured approach to the identification, prioritization, and engagement of each stakeholder is highlighted by academic studies and analyses of high-profile project failures. The ability of the project manager and team to appropriately understand and interact with each stakeholder in an optimal way could mean the difference between a successful and unsuccessful project (PMI, 2017).

The process of stakeholder identification and engagement should begin as soon as the project charter has been accepted, the project manager has been assigned, and the team begins to assemble in order to enhance the likelihood of success (PMI, 2017).

Stakeholder satisfaction needs to be acknowledged as a projective goal and handled. The secret to successful stakeholder engagement is a focus on ongoing dialogue with all stakeholders, including group members, to understand their goals and expectations and to handle problems as they arise.

Managing conflicting interests and promoting appropriate stakeholder engagement in project decisions and actions are essential for effective stakeholder management (PMI, 2017).

Iterative stakeholder identification and attraction strategies are used to advance the task. The activities of identification, prioritization, and engagement should be revised and updated consistently and at least at the times when (PMI, 2017):

- The project goes through different stages in its life cycle,
- the current stakeholders have stopped participating in the undertaking or new stakeholders become a part of the project's stakeholder community, or
- There is a change in the stakeholder community.

2.5 Document Delivery

- **Methods/Techniques for Work Program Preparation**

One of the key functions of a time management tool is the ability to create a work schedule or program using a variety of tools or approaches. In the construction sector, a variety of methods are used to show a work schedule. The most often used scheduling techniques for construction projects, according to Trauner (2009), include narrative schedules, Gantt charts or bar charts, linear schedules, and Critical Path Method (CPM) schedules. He continues by saying that the application of these scheduling methods/techniques for projects depends on factors including project size, project type, project complexity, and owner expectations expressed as contract specifications and conditions.

The approaches mentioned above are not all-inclusive and were simply selected for this paper's purposes and in accordance with the terms of the FIDIC contract. Additionally, the techniques used to portray the contractor's work program are stand-alone, although it has been discovered through experience that they should also incorporate a few additional contract-specific requirements. Details of the aforementioned four are provided in the bullets that follow:-

A. Schedules with narratives and a method statement

The use of narrative timetables is typically restricted to extremely small, low-activities building projects [Trauner, 2009]. A narrative schedule is typically provided prior to the commencement of work and includes a narrative explanation of the contractor's intended building sequence.

The contractor was asked to submit a narrative schedule or methods statement in accordance with FIDIC [1987/1992] term of contract, which includes a description of the construction methods and arrangements the contractor wants to use to complete the job.

B. Bar charts and Gantt charts

The primary work activities for the project are graphically represented in a Gantt chart, often known as a bar chart schedule. It shows how long each task will take and how they are supposed to be done in order. Keane [2008]. A Gantt chart or bar chart schedule is an easy-to-understand representation of the construction plan that shows the timing and duration of the work activities as well as the inferred order of the jobs.

This method has been utilized from the conceptual development time planning's early stages, according to Wubishet and Tigist [2008], and practitioners continue to use it either alone or in conjunction with CPM and PERT.

The earliest work item is usually in the first row, the next earliest in the second row, and so on. Work activities are often arranged in descending chronological order.

According to Trauner [2009] in regard to the application, Gantt charts or bar charts are frequently employed on smaller to mid-sized jobs when the relationships among the activities are clear or simple to understand. Additionally, a typical Gantt chart or bar chart schedule is only one to two pages long and merely outlines the main work items.

Similar to Gantt charts, FIDIC 1987/1992 and CoPA both mentioned it as the contractor's duty to provide the chart with the necessary information.

C. Critical Path Method in a Network Schematic

A critical path method (CPM) schedule is a tool for creating work programs that is similar to a bar chart schedule in that it shows the project's activities through a straightforward arrow diagram. On the other hand, this network diagram has more advantages than the Gantt chart, according to Wubishet et al. (2008), because it can display the task dependencies between activities. The method's CP displays the earliest possible completion date for the project.

According to the FIDIC 1987/1992 resource, all contract administration programs presented by the contractor to the relevant authority shall be in the form of a Critical Path Method Network (CPM Network).

This program outlines the steps to take and provides a description of the construction activity preparations and procedures that the author proposes to use when lifting out the works.

D. Using a temporal space diagram or a linear scheduling approach

This approach, also known as Line of Balance Scheduling in some literature, is the most efficient way to organize and control building projects. These projects are primarily employed in projects like building roads, pipelines, and electricity lines since they have a repeating or linear aspect [Trauner, 2009].

The advantage of using linear scheduling approaches over other methods is that they make it simple to compare the production rates of specific schedule activities. However, one of its flaws is that it fails to pinpoint the project's key path.

It is observed in CoPA that this form of scheduling is questioned in contracts governed by FIDIC 1987/1992 conditions of contract before being presented by the contractor. The consulting engineers asked contractors to present this kind of timeline in contracts when it is not specifically stated.

- **Additional Submissions Included in the FIDIC Program Clause**

The following supplementary and supportive submittals are specified as a contractor's obligations to provide as a part of the work program in contracts handled under FIDIC 1987/1992 conditions of contract, in GCC, and in CoPA:

i) Cash Flow

The FIDIC [1987/1992] specifies that the contractor must submit a detailed cash flow forecast within the allotted period and update it quarterly as the Engineer requests in subclause 14.3 of the GCC.

In addition to and/or supplementing CoPA, the contract implementer or contractor is required to include the following provisions while setting up the cash estimates:

- advance payment,
- repayment of advance,

- ❖ retention,
- ❖ payment for services provided by the Employer and
- ❖ Time for Payment and Interest.

ii) S-Curve

It is a graph of time and cost. The graph's shape, which resembles the letter S, gave rise to its name. The curve component has been clarified, according to Midoria Media (2015), who wrote this article. According to his interpretation, the upper curve stands for a gradual but accelerating start, while the end curve depicts a slowing down when the work is completed.

iii) Schedule for Manpower and Equipment

The contractor is required to set up the program that grants element information on the equipment and labor assets to be allocated to each and every development operation in contracts administered by means of FIDIC 1987/1992, as stated in the conditions of contracts, in the CoPA.

iv) Program for Material Requirements and Mobilization

Contracts managed by FIDIC 1987/1992 conditions of contracts, in CoPA, state that the contractor is responsible for submitting the program that provides specific information about the materials required and the mobilization in accordance with the clause 14 programme, necessary to enable the contractor to adhere to the programme.

v) Organizational Design

An organizational breakdown structure (OBS) output is the definition and assignment of a decomposed manpower need for each task.

- ➢ **Presentation, Consent, and/or Approval**

The majority of contracts stipulate that the contractor must create a plan and submit it to the client's consultant or project manager. Additionally, it clarified the terms of the contract's clauses FIDIC [198/1992] and PPA [2006] addressing the submission of the program.

- ➢ **Time for Submission in accordance with FIDIC 1987/1992**

In Sub Clause 14.1 - Program to be submitted, the FIDIC version as previously mentioned states that "The Contractor shall, within the time referred to in Part II of these Conditions after the date of the Letter of Acceptance, post to the Engineer for his consent a programme, in such

structure and element as the Engineer shall reasonably prescribe, for the execution of the Works."

According to the Appendix to the Bid, the program must be submitted within 42 days of receiving the acceptance letter. Additionally, it specifies that the cash flow forecast submission deadline will fall on the same day.

The above clause in the contract specifies that the program is a submittal made by the contractor to the owner or the design expert for approval or another action, which is typically a contractual necessity. Mubarak [2010] asserts a similar idea to this. Submissions play a significant role on the scheduling. The contract's submission procedure should be precise with regard to time restrictions.

- **The Acceptance/Approval Process**

The client's project manager or consultant must evaluate, respond, and approve or accept the program as part of the approval process.

Evaluation by the Engineer

The Engineer must conduct the required tests or evaluations after receiving the contractor's work schedule. According to Singh (2004, 2004), the assessment makes it possible to make sure that the material supplied should be comprehensive and meet many requirements.

Answer from the Engineer

After reviewing the contractor's work program submission, the engineer will answer as soon as reasonably possible, keeping in mind the contract's provisions. The engineer's answer is either to withhold approval while asking for further details, to approve or accept the program in writing, or to reject or disapprove the program in writing while stating the reasons.

According to Singh (2004), the work program is presumed to have been approved or accepted by the Engineer if the Engineer does not respond within the specified length of time or within a reasonable amount of time (if none is specified) from the date of receipt of the contractor's submission.

Engineer's Approval/Rejection

The engineer will send his acceptance or approval of the work schedule as one of the parts of the response. Singh (2004) asserts that the permission, consent, or acceptance has the following implications:

- It denotes the Engineer's agreement with the suggested order or sequence of tasks in the work schedule.
- The approved work schedule may be taken into account in any disputes in order to provide the contractor with any necessary information or details in order to establish order or for the purpose of granting the employer control of the site.
- This is usually subject to the unambiguous qualification that the program's approval by the contract administrator does not relieve the employer or the contractor of any obligations under the terms of the agreement.

The engineer's approval or disapproval of the program is another crucial factor. If the engineer deems the submission unacceptable, he may reject it along with the reasons why and may ask the contractor to make the necessary changes before resubmitting the program for consideration.

In this regard, neither the PPA 2006 contract clauses nor the FIDIC 1987/1992 clauses are being widely applied in relation to the acceptance or rejection of the program.

Engineer withholding approval or acceptance

The engineer may refuse to grant approval if he or she thinks it is appropriate to do so after informing the contractor of the program's limits. Possible causes include

- unclear content,
- insufficient information provided,
- Disagreement with the reasonableness of the milestones set in relation to the obligations of the employer and/or contractor, and other variables that have a significant impact on the program.

In this case, the Engineer has the right to request in writing from the contractor more justification, assurance, and proof regarding the suitability of the productivities, the quantity of resources assigned, the contractor's duty, etc.

- **The effects of a failed program submission**

The second query that necessitates an answer is the effect of failing to submit and gain approval of the program on the commencement of work.

In some contracts governed under FIDIC 1987/1992 and PPA 2006, it is specified that, in the event of noncompliance, the Employer will withdraw a specific sum of the contractor's funds.

The amount could differ from one contract to the next. But there won't be any consequences if the contractor doesn't provide all that is required under the contract.

In light of this, Singh [2004] asserts and indicates that the contractor may also start the work even if the work program approval is still waiting. However, the reasons for any approval may also be taken into consideration for resolving any disagreements regarding the practical sequence or order for transferring ownership of the site or for submitting further drawings, crucial details, or information.

- **The Reasons Why the Approval Process Takes More Time**

Numerous project types have demonstrated that project work programs are not submitted and authorized in the allotted time. This could be for any of the following reasons:

- **Delayed Contract Signature**: The program submission deadline may be impacted by a delayed contract signature.
- **The technique and degree of detail necessary for the program**: the kind and quantity of detail submittals the contract stipulates must be included in the program.
- **Unlimited demands from the consultant**: The client's consultant or project manager could ask for too much and extra information to be provided. Additionally, the consultant may insist on using software that he is well familiar with.
- **Increased contract requirements**: Depending on the contract, different contracts may have different submission requirements. It will be impossible to meet the submittal requirements within the time frame indicated in the contract terms.
- The contractor will intentionally or unintentionally fail to submit the program by the deadline, as the timeframe stated in the contract is insufficient.
- **Differences in assumptions and considerations**: The supervisor and the contractor may have different perspectives on the assumptions and considerations the contractor made.
- **Access to sufficient Planning Experts**

2.6 Empirical review

A supervisor or crew leader is the main person bridging management and the workforce on construction projects. The most important factor in attaining organizational success and worker performance is his leadership style and behavior in directing construction activities to be completed on websites online (Lutchman et al. 2012: 68).

In a similar vein, leadership and a leader's behavior can motivate and encourage subordinates to give their best effort, according to Filn and Yule (2004: 47). There has been empirical evidence connecting frontline managers' or supervisors' leadership qualities to organizational successes for decades.

Simard & Marchand (1994), as cited in Flin and Yule (2004): 47, noted that participative management styles and cooperative supervisory-workgroup relationships were identified as the most important predictors for fostering harmony between employees and supervisors and resulting in the highest levels of worker performance.

Delay in making decisions is reportedly one of the development quarter's most significant issues right now. Late decision-making has an effect on many various aspects of a project, including project cost, timeframe, quality of work, and many more. Since the client is the lone owner of the project, it is the client's crucial duty to streamline the decision-making process so that decisions may be made quickly. The project's stakeholders are no longer negatively impacted by high-level decision-making delays. (Momani, Al, 2000)

If we choose the delayed way of decision-making among the alternatives, it will impact the project and delay the contractor's work. In this case, the customer can also be faced with more requests for payment from the contractor to cover additional time and costs. (2011) Alhomadi et al.

The primary causes of decision making delays are a lack of organizational support, changes in market pricing, poor statistics from suppliers, and the absence of a decision-making method (Cherian & Kumaran, 2016). Project delays and inappropriate conduct by customers, contractors, and consultants, among other essential project participants, have an effect. 2019 (Shrestha & Fathi).

It is acknowledged that the reasons for the lengthening of the decision-making process include poor communication between the participants, a lack of enthusiasm, a lack of knowledge and information, and major project issues.(2011) Haseeb et al.

According to Pourrostam and Ismail (2012), the main factor contributing to the lengthening of a building project is the client's delayed decision-making. For projects to be completed quickly, the customer's decision-making efficiency must be increased. Issues for stakeholders should arise from missing records and archives. The extent to which concerned stakeholders participate in decision-making may also affect the success of the challenge. Additionally, it might aim to incite conflict between the contractor and the owner. 2014 (Owolabi et al.).

Only a small number of studies have been conducted in the field of development to examine the value of stakeholders' characteristics, behaviors, and decision-making strategies. Prior research has suggested that the choice of decision-making techniques is extremely related to the characteristics and behaviors of stakeholders in practice. Few studies have been conducted to examine the significance of stakeholders' features, attitudes, and decision-making in the field of construction. in 2023 (Müller et al.).

Construction projects are unique endeavors in terms of a building's design, as well as the company managing the project, the manufacturing facility, and the production techniques. In terms of the actual production procedures, construction projects could also be unique. They are exotic because to the large number of different stakeholders present, which has historically operated as a barrier to the advancement of built-in information structures that necessitate the management of distributed information and responsibilities. 2011 (Scherer & Schapke). Construction companies needs precise and knowledgeable management to make timely decisions and follow the method of choice for a smooth project execution. 2019 (Pham & Kim).

In order to determine the impact of stakeholders' participation in project identification, assignment planning, task execution, and mission consideration on mission outcome, (Macharia, 2013) conducted a study. The results show that the involvement of stakeholders in the project's implementation was crucial to its success.

Enforcing good stakeholder management in development challenging transportation has a significant impact on the project's successful end, claim (El-Naway et al., 2015). The ability to influence diverse individuals who are interested in the project is what makes building development successful. Given the diversity of interests and wants among stakeholders in a development mission, it is essential to comprehend these needs as the development process is being directed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The word "research" refers, in its literal sense, to the systematic method of subsequently, following careful study and analysis, arriving at a solution to a problem. The methodologies and procedures that will be employed to address the research questions posed in the first chapter of this study are discussed in this chapter.

Typically, it starts off by introducing the chapter. The study approach and design are covered in the first section, which contains quantitative research with descriptive method. The population, sample size, and sampling strategies are discussed in the following section, along with an explanation of the researcher's rationale for selecting particular methods. The methods the researcher employed to gather the crucial data for the study and the data sources are covered in Section 4. The methods and tools for data analysis that the study will utilize to create are described in Section 5. Finally, the study's ethical concerns are addressed.

3.2 Research Approach and Design

- **Research Approach**

Based on the nature of the research problem being addressed, a research methodology is a plan and procedure that entails the steps taken from broad assumptions to specific methods of data collection, analysis, and interpretation. Quantitative, qualitative, and mixed methodologies are three of the common study approaches used by researchers (Jasen, 2016).

A research style known as the quantitative approach focuses on quantifying data collection and analysis. It is derived from the deductive method, which emphasizes the testing of theories and shapes positivist and empiricist philosophy. 2009(Henderson).

Since this research assesses the site supervision leadership it will use the quantitative method of approach.

- **Research Design**

This study simply uses a descriptive tool for the research design. Since the researcher has no control over the variables in a descriptive design, a descriptive tool was chosen to answer the research question. It either clarifies the essence of things as they are right now, or the author will write about what has already happened or is happening right now, and this is fact-finding in the present (Saiyadain, 2003). A comprehensive description of a sensation in connection to its setting is also included in this technique of investigation, which is based on extant theories and hypotheses (Saunders, Lewis, and Thornhill 2009).

3.3 Target Population and Sampling

- **Target Population**

The engineering unit is one of the various business units of EEP. There are six different offices inside the engineering unit, according to the administrative office's report data. The Supervision and Contract Administration Office (SCAO) is one of these six offices. This office manages contracts and oversees EEP project sites where the engineering unit has signed contracts with independent and own contractors. To monitor and oversee the project sites, the relevant electrical, civil, and/or mechanical engineers are assigned to each site.

The target demographic for this study includes both office engineers and site engineers. Since there are a manageable amount of engineers at the office, the researcher used the census approach to determine the total number of engineers there. A census investigation is a thorough count of the "population's" constituents. Since all of the elements are protected, it is acceptable to infer that there is no longer a chance factor and the utmost level of accuracy is attained (C.R. Kothari, 2004).

Hence, the fact that the researcher used census method of data collection enables him to get a reliable result from the study. Based on the official data from SCAO the total number of engineers from SCAO office and other engineers from another office they came to SCAO by borrowing for the same work activity due to different reasons are the population for the research.

- **Sampling**

Since there are 70 engineers in the target audience as a whole, it is easy to manage this research and incorporate all of the participants in order to communicate with them effectively. In light of this, Kothari (2004) suggests that the ideal sample is one that satisfies dependability requirements.

3.4 Data Collection

The research used both primary and secondary data gathering methods to gather information from the resource. For the purpose of gathering primary data, structured questionnaires are constructed. These forms will be filled out independently by the engineers. Because questionnaire surveys enable the widely scattered collection of data from respondents, this strategy was chosen.

The questionnaire's questions were arranged in order to achieve the aim of the study article. The questions in the questionnaire are divided into two sections. In the first segment, demographic data will be acquired, and in the second, data for factor evaluation will be gathered. The second section employs a five-point Likert scale with the options "strongly disagree" to "strongly agree," with "strongly agree" being the highest score.

The necessary secondary data will be collected in a face to face request from the concerned office.

3.5 Data Analysis

The study suggests utilizing the SPSS version 26 software program to analyze the information obtained from respondents using a questionnaire. By assembling the common notions among the respondents into a broad structure, the open-ended interview is investigated. Additionally, the researcher will present data obtained from primary sources in the form of mean and SD using tables. Once more, the study proposes to use descriptive statistic to assess the leadership of site supervision.

Kothari (2004) defined data analysis as the computation of specific indices or measurements as well as the look for associations between data sets. When using a survey approach, analysis involves estimating the values of unknown population variables. Hence there we will use descriptive data analysis.

3.6 Validity and Reliability

Validity refers to a research method's ability to identify the correct reality. A reliable study can demonstrate that the planned measurement output was taken precisely. If the researcher is conducting in-depth research on people, small enterprises, or situations, validity is crucial. Any researcher who can guarantee the validity of his findings can be guaranteed that there will be a specialist in the topic under study. On the other side, if there is a lack of legitimacy in the research, the conclusions won't be accurate. (Earl Babie 1989, 127; Curtn & Brow 2010, 211).

The constancy of virtually the same results on several but comparable occasions is referred to as reliability. If the research was repeated, it would provide the same or a similar outcome. If a researcher is confident in the validity of his work, he or she can be sure that there is less possibility that they will take a random pattern or trend displayed by their sample and extrapolate it to generalize about the population. (209) Churton and Brown.

For this study, the researcher first conducts a pilot study to evaluate the validity of the data gathering tool. Professional SCAO department staff evaluated the validity of the questions and offered suggestions and input on their representativeness and suitability for the study's goals. The questioner sent the suggested comment for the intended respondents after analysis and response.

Later, after gathering the respondents, the reliability was evaluated using Cronbach's Alpha. Reliability is a result of consistency. It evaluates if replies are consistent throughout all of your questionnaire's questions or just a portion of them (Saunders, 2009). The factors of the research have been described in the table below using Cronbach's Alpha.

The categories on the reliability test scale are, according to George and Mallery, Excellent (1-0.9), Good (more than 0.8), Acceptable (more than 0.7), Questionable (greater than 0.6), Poor (higher than 0.5), and Unacceptable (less than 0.5). 2003 (George and Mallery). As a result, the tool was proven to be accurate for assessing site supervision performance at EEP's SCAO projects.

Table 3.1: Reliability data for the overall test result, the independent variable, and the dependent variable

Reliability Statistics		
Independent Variables	**Cronbach's Alpha**	**NO. of Items**
Site supervision Performance	.879	13
Document delivery	.723	7
Stakeholder relationship	.725	5
Dependent Variables		
Leadership effectiveness	.737	5
Overall	.903	30

3.7 Ethical Consideration

The definition of ethical in the eighth edition of the Oxford Advanced Learner's Dictionary is "morally right or acceptable." In this study, it was essential for the researcher to gather and use the respondents' data in a way that was ethically just. Additionally, the researcher respects the respondents' privacy by keeping their responses' personal information confidential. The best step to reduce the likelihood of violating people's rights and freedoms and invading their personal space was data collection. The researcher made an effort not to disclose the identities, addresses, or dwellings of the participants in order to avoid unethical data collection practices that might ultimately cause societal harm to their individual life or that of their families.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1 Introduction

This study has the target of assessing the site supervision leadership of projects at SCAO of EEP. To achieve this target, the researcher has gathered data through questionnaires and secondary data sources. This chapter provides the output of the research with the possible detail means like data presentation, analytic results, and discussion of findings derived from data gathered.

4.2 Demographic Information of the Respondent

For this research the primary data was collected through a self-administered questionnaire sent through the different possible social media and hard copy. To collect data questionnaires distributed to all Supervisors, office engineers and resident engineers of the office, total of 70 in number. Among these questioners 64 was returned back but only 61 were properly filled and it’s around 87% of the total number of questioner sent for respondents.

Only one woman was evident from the demographic data table (table 4.1), which reveals that nearly all of the responders were men. The age group of 29 to 39 years old had the biggest percentage of responders (68.9%), followed by 40 to 50 years old with 13.1% and beyond 50 years old with 11%. The respondents' age distribution showed that the younger age group comprises the majority of them.

The respondents' educational data are as follows: diploma 9.8%, degree 85.2%, master's 3.3%, doctorate 0%, and other 1.6%. In contrast, more than 95% of respondents who answered questions about their employment history said that they were professionals with more than five years of experience. Additionally, within the last ten years, more than 85% of the workers were involved in more than five (5) initiatives. This outcome suggests that the respondents have long experience working on projects.

The respondents are generally in a position to provide accurate information about the leadership of site supervision on SCAO projects based on their experience in the business, according to the demographic profile.

Table 4.1 Demographic Information

Classification		Rate of occurrence	%
Sex	Female	1	1.6
	Male	60	98.4
	Total	61	100
Age	18 up to 38		
	29 up to 39	42	68.9
	40 up to 50	8	13.1
	51 and above	11	18
	Total	61	100
Education	Diploma	6	9.8
	Bachelor degree	52	85.2
	Master's degree	2	3.3
	others	1	1.6
	Total	61	100
Work Experience	1 to 5 year	3	4.9
	5 to 10 year	40	65.6
	above 10 year	18	29.5
	Total	61	100
Total project involved in last 10 years	Less than 3	5	8.2
	3 to 5	4	6.6
	5 to 7	29	47.5
	above 7	23	37.7
	Total	61	100

4.3 Descriptive Statistics for Study Variables

The respondents were asked for their thoughts on the performance of site supervision and leadership in SCAO projects of EEP. To assess the respondents' level of agreement with the following statements for each dependent and independent variable, the researcher utilized a five-point Likert scale to analyze their responses.

The descriptive analysis for each variable is summarized in the section that follows, and every determination of the mean value in these studies is based on the mean scope measurement noted by (Zaidatol, 2009). A mean score between 3.40 and 3.79 is regarded as moderate, 3.80 and above is regarded as high, while a mean score less than 3.39 is seen as low.

Joshka's decision rule for standard deviation, on the other hand, was used to decide on the value of the standard deviation. According to Joshka (2014), "estimate the coefficient of variation (CV=standard deviation / Mean)," a CV >= 1 suggests a very high level of variation, while a CV 1 denotes a comparatively low level of variation. As a result, distributions with a CV more than 1 are regarded as high variance, whilst those with a CV less than 1 are regarded as low variance.

- **Site supervision performance**

Description about the below table mean value score:

- The minimum mean score from the below table is 3.72 and it is within the moderate range based on Zaidatol rang. On the other hand based on Likert scale the minimum mean score is above the neutral scale, nearly approach to agreed scale.
- As per the Likert scale the average value, 4.062, explains that all the respondents are agreed about the site supervision performance is the main concern in increasing the effectiveness of leadership.

Table 4.2: Descriptive Statistics; Site supervision performance

Item Code	Description of Items	N	Mean	Std. Deviation
SSP1	S-1	61	4.30	.863
SSP2	S-2	61	4.21	.609
SSP3	S-3	61	3.72	.897
SSP4	S-4	61	3.80	.891
SSP5	S-5	61	**4.43**	.763
SSP6	S-6	61	3.84	1.067
SSP7	S-7	61	4.20	1.030
SSP8	S-8	61	4.13	.645
SSP9	S-9	61	4.11	.839
SSP10	S-10	61	4.30	.863
SSP11	S-11	61	4.20	.601
SSP12	S-12	61	3.72	.897
SSP13	S-13	61	3.85	.813
	Average Value		4.062	0.830

Remark: - S-1 to S-13 in the above table refers for questions of questioner grouped for Site supervision performance.

- Among all the questions forwarded "Time considered as critical parameter" for respondents based on their maximum mean value at SSP5. On the other hand at SSP3 and SSP12 respondents relatively reflects lower on the root cause fullness of cost and the respectfulness of the rule of EHS.

Description about the above table SD value score:

- As per Joshka's decision rule the SD value for items SSP6 & SSP7 have higher value, above 1. This implies that the respondents have differences/variance on the concept that "Supervision can affect project schedule" and "Supervision has direct/indirect impact on defects".
- On the other hand the overall average value of the respondents, scored as 0.83, is low value and based on Joshka's the respondents have low variation.

- The other score 0.601, scored at SSP11, is the minimum SD and indicates that respondents have relatively low variation on "Consistent work supervision resulted in client satisfaction"

- **Delayed Document Delivery**

Table 4.3: Descriptive Statistics; delayed Document Delivery

Item Code	Description of Items	N	Mean	Std. Deviation
DD1	D-1	61	4.44	.719
DD2	D-2	61	3.90	.926
DD3	D-3	61	4.30	.823
DD4	D-4	61	4.15	.654
DD5	D-5	61	4.15	.813
DD6	D-6	61	3.87	.785
DD7	D-7	61	4.31	.593
	Average Value		4.16	0.759

Remark: - D-1 to D-7 in the above table refers for questions of questioner grouped for document delivery.

Description about the above table mean value score:

- Based on Likert scale the average mean score value indicates that all the respondents agreed or strongly agreed regarding the proper and on time document delivery to site can be the cause of good leadership output.
- The least mean scored value, scored at DD6, indicates that delayed delivery of documents regarding EHS is relatively lower even though the respondents are in the status of agreed in proper delivery.
- The maximum mean score value, scored at DD1, justifies that proper work schedule for delayed document delivery can greatly impact the leadership.

Description about the above table SD value score:

- Generally all the respondents have low variation regarding the impact of document delivery on the effectiveness of leadership. As per Joshka's scale, with average SD value scored 0.759, the variation is low. Even the highest SD score, scored at DD2,

indicates that the respondents have low variation regarding the dependency of updated scheduled document.

- **Stakeholder Relation**

Description about the below table mean value score:

- As per Likert scale the average mean value, 3.93, indicates almost the agreed score. On the other scale measure, Zaidatol rang, the average mean value considered as high mean value. Hence all respondents have the same argument regarding the impact of stakeholder relationship on the leadership.
- As per Zaidatol rang the mean score value for item SH1 considered as low. It implies that the effect of Stakeholders or Contract parties' relationship on time schedule of SCAO projects is relatively lower.

Description about the above table SD value score:

- Generally the above average value of SD as well as the maximum SD value is below 1 and as per Joshka the variation is low. This implies respondents have common and relatively similar response related to stake holder's relationship in projects of SCAO.

Table 4.4: Descriptive Statistics; Stakeholder Relation

Item Code	Description of Items	N	Mean	Std. Deviation
SH1	H-1	61	3.33	.676
SH2	H-2	61	4.07	.629
SH3	H-3	61	4.15	.727
SH4	H-4	61	3.93	.704
SH5	H-5	61	4.20	.601
	Average Value		3.93	0.667

Remark: - H-1 to H-5 in the above table refers for questions of questioner grouped for Stakeholder Relation

- **Leadership**

Table 4.5: Descriptive Statistics; Leadership

Item Code	Description of Items	N	Mean	Std. Deviation
LE1	E-1	61	3.82	.866
LE2	E-2	61	2.59	.761
LE3	E-3	61	2.26	.705
LE4	E-4	61	3.28	.733
LE5	E-5	61	3.59	.668
	Average Value		3.108	0.747

Remark: - E-1 to E-5 in the above table refers for questions of questioner grouped for leadership

Description about the above table mean value score:

- Regarding completion of SCAO projects within in the scheduled budget requested at item LE2 about 45.9% disagree and 3.3% strongly disagree of the total respondents. Again on the other dimension, completion of SCAO projects within their scheduled time, the respondents disagreed with 62.3% and strongly disagree with 8.2% out of the total respondents.
- In contrary with the above observation SCAO projects of EEP meet its objective highly, with scored mean of 3.82, and attain its moderate overall quality, with scored mean of 3.59, as per Zaidatol rang.
- Generally, as per Zaidatol rang, the average mean value of the leadership, scored as 3.108, indicates that respondents have low mean value. Based on Likert scale almost the respondents are Neutral for the site supervision leadership.

Description about the above table SD value score:

- Generally the average SD value, scored as 0.747, as well as the maximum SD value, scored as 0.866, lies within low variation score under Joshka measurement scale. This justifies that almost all respondents don’t have that much big difference regarding the points raised under the leadership of site supervision.

4.7 Discussion of Results

The primary goal of this study was to evaluate the impact of leadership on project site supervision performance under projects managed by Ethiopian Electric Power's supervision contract administration office. Site supervisors and office engineers from the staff of the

supervision contract administration office, as well as other engineers from another department who have recently and previously worked in this office, participated in the survey of questioners. A total of 64 of the questioner—out of a total of 70—were answered; three of the questioner weren't fully answered. As a result, the 61 correctly completed and returned questioners, or 87.14% of the population overall, are what we use to analyze the data.

According to the examination of descriptive statistics, the variables utilized in this study have a standard deviation that spans from 0.667 to 0.83.This indicates that replies from project participants are highly consistent. In contrast, the research variables' mean scores of 4.062, 4.16, 3.93, and 3.108 indicate that participants in the survey agreed on most of the factors, with the exception of the leadership category, where they preferred to be neutral.

Scolobig and Späth 201 assert that building a relationship with stakeholders through stakeholder management is crucial to projects' success. Additionally, Späth and Scolobig (2017) emphasize that a project's motivation is to serve its stakeholders.

CHAPTER FIVE

SUMMERY OF FINDING, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The findings of the study from the assessment of the site supervision leadership in the case of supervision contract administration office of Ethiopian Electric Power are summarized in this section. This part also includes conclusions and recommendations based on the findings.

5.2 Summary of Findings

Among the total 70 questionnaires that were distributed to respondents, 61 questionnaires were properly filled and returned, 3 questioners were returned but the respondent filled wrongly with non-replied questions and the remaining 6 questionnaires were unreturned. Hence using the returned questioners, which accounted 87.14% the research has gone further analysis.

Using application software statistical Package for Social Science (SPSS) Version 26 the analysis was conducted on returned questionnaires. For the sake of analysing the data different techniques has been used. During the analysis combined mean and standard deviation values were used in the descriptive analysis conducted in order to assess the site supervision leadership.

The research questioner starts by demographic information such as education, age, sex, work experience. Of the total 61 properly filled and returned respondents only 1(1.6%) woman accounted and the rest 60 (98.4%) were men. Regarding their age 82% (50) respondents were under or 50 years of age. Concerning their education all are graduated in the field of engineering, with 85.2% (52) graduate with 1^{st} degree and 3.3% (2) holds their masters. The rest accounted below the first degree. The last demographic item, work experience, indicates above 95% (58) have an experience of more than 5 years.

The description analysis shows the mean and standard deviation of each variable concerning the minimum and maximum values. Accordingly site supervision performance has (Mean=4.062, SD=0.83), delayed document delivery (Mean=4.16, SD=0.759), stakeholder relationship (Mean=3.93, SD=0.667) and leadership (Mean=3.108, SD=0.747). The findings shows that all the respondents are agreed that the cost, time, defect, client satisfaction with the product, client satisfaction with the service, safety and profitability have their own input in the site supervision

leadership (with an average mean of 4.05). On the other hand the respondents were generally ranges from neutral to agree regarding the achievement of the office objective (mean=3.83), stakeholder satisfaction (mean=3.82) & overall quality (mean=3.59). Finally the respondents reflect their opinion about completion of projects of SCAO of EEP within budget (mean=2.59) & schedule (mean=2.26) by lying in the range of disagree to neutral using Likert scale.

5.3 Conclusion

The main aim of the study was to assess the site supervision leadership that have significance on the site supervision performance on projects of Supervision Contract Administration Office of EEP.

Initially the researcher set different objectives, now at the end the research has achieved its objectives and the researcher has made the following conclusions based on the findings of the research.

Examining the impact of site supervision performance, document delivery and stakeholder relationship on the site supervision leadership were specific objectives of the study. The descriptive analysis of the study revealed that all the independent variables have a higher mean value. Generally, these values show that all the independent variables have an input in the site supervision leadership on the projects of SCAO of EEP according to the respondents reply on questioner. In a relative speaking, among the three independent variables stakeholder relationship scored lower mean value(3.93), according to Likert scale the office shall give more concern for the sake of scoring better but based on Zaidatol rang all variables have higher value .

Finally this study concludes that site supervision performance, document delivery and stakeholder relationship have a positive and significant effect in the site supervision leadership.

5.4 Recommendation

As per the findings from the study:

- Leaders shall better to work on the accomplishment of projects within the contractual schedule as well as budget. As cost, time and quality are building blocks of constructions projects leaders shall balance these needs of projects to achieve success.

- On top of that as per the results we get on the study the office of SCAO at EEP shall better strength to work on in depth for the independent variables in order to have leader's better output together with other unforeseen variables which here are not mentioned.

5.5 Suggested Further Research

This research has the aim of assessing the site supervision leadership due to the overall site supervision in Supervision Contract Administration Office projects of Ethiopian Electric Power.

The study enclosed within the engineers of SCAO either working in office or at site. But the office of SCAO has different work related connections with other body like engineering support department, engineering design office, human resource office, internal and external contractors and others.

Hence as a suggestion for the future research area, the site supervision leadership for SCAO might also be studied by increasing the population size depending on the condition or adding or using other variables which this research paper didn't cover/unobserved due to different reasons.

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APPENDIX

QUESTIONER

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

MASTER PROGRAMS IN BUISNESS LEADERSHIP

Questioner for Supervisors of SCAO

Dear Sir/Madam

Good day! I am a graduate student in the postgraduate program of Business Leadership at Addis Ababa University, School of Commerce. I am currently undertaking a research project on the topic "Assessment of the Site Supervision leadership: the Case of Supervision Contract Administration Office (SCAO) projects of Ethiopian Electric Power (EEP)" to fulfill the partial requirement for the Master's Degree program.

There are several factors that can make this research fruitful, but for the most your cooperation, honesty and genuine responses are the basic ones. I would be grateful if you kindly take few minutes of your time from your busy schedule to fill out this questionnaire. Your willingness and cooperation in giving genuine response is well appreciated and the information you provide will be used for academic purpose only and will be kept in strict confidentiality.

Dears for any info request about this study or in completing the questioner, don't hesitate to ask me via email " johailu@yahoo.com" , "telegram", or "WhatsApp" using my cell phone.

I do appreciate for your time and support.

Sincerely,

Yohannes Hailu

SECTION I:

General Information

Kindly mark X or √ for the answer you will select.

1) Education level

☐ Diploma ☐ Doctorate degree

☐ Bachelor Degree ☐ Other: _____

☐ Master's Degree

2) Sex ☐ Female ☐Male

3) Age ☐18-28 ☐ 29-39 ☐ 40-50 ☐ 51 and above

4) Work Experience

☐ Less than a year ☐ 5 years to 10years

☐ 1 year to 5 years ☐ above 10 years

5) Total number of projects you have been involved in your Organization during the last 10 years?

☐<3 ☐ 3-5 ☐5-7 ☐ >7

SECTION II: - Site supervision performances

Kindly respond the statement by putting the mark X or √ to show the degree to which you concur with the statement. Please use the following **"NOTATION"**

- **"SD"** refer for **"Strongly Disagree"**
- **"D"** refer for **"Disagree"**
- **"N"** refer for **"Neutral"**
- **"A"** refer for **"Agree"**
- **"SA"** refer for **"Strongly Agree"**

No	**Construction cost**	SD	D	N	A	SA
S-1	Project cost has direct impact on SCAO of EEP projects.					
S-2	Cost can affect the time schedule of SCAO projects of EEP					
S-3	Cost is the root cause of performance on SCAO projects of EEP					
S-4	Site supervision has cost impact on SCAO projects of EEP					

(Please note the "NOTATION" SD, D, N, A, & SA above)

No	**Construction Time**	SD	D	N	A	SA
S-5	Time considered as critical parameter for SCAO projects of EEP					
D-1	Work schedule affect project on time success on SCAO projects of EEP					
S-6	Supervision can affect project schedule on SCAO projects of EEP					
D-2	SCAO projects of EEP dependent on updated schedule document					
	Stakeholders or Contract parties relationship affect time schedule on SCAO projects of EEP					

(Please note the "NOTATION" SD, D, N, A, & SA above)

No	**Defects**	SD	D	N	A	SA
S-7	Supervision has direct/indirect impact on defects of SCAO projects of EEP					
D-3	Late information update can might result defect on SCAO projects of EEP					
H-2	Smooth contractual relationship b/n contract parties can reduce defects on SCAO projects of EEP					
S-8	Defect is interrelated with cost, time & quality of construction on SCAO projects of EEP					

(Please note the "NOTATION" SD, D, N, A, & SA above)

No	**Client satisfaction with the product (Final work)**	SD	D	N	A	SA
S-9	Client final site acceptance is the result of contractual satisfaction on SCAO projects of EEP					
S-10	All supervision finally resulted full client satisfaction on SCAO projects of EEP					
D-4	On time contractual document delivery can also be cause for client product satisfaction on SCAO projects of EEP					
H-3	Contract parties' relationship is basic for the final output of work on SCAO projects of EEP					

(Please note the "NOTATION" SD, D, N, A, & SA above)

No	**Client satisfaction with the service (Work progress)**	SD	D	N	A	SA
S-11	Consistent work supervision resulted in client satisfaction on SCAO projects of EEP					
D-5	Proper documentation flow resulted in client satisfaction on SCAO projects of EEP.					

(Please note the "NOTATION" SD, D, N, A, & SA above)

No	**Safety**	SD	D	N	A	SA
H-4	EHS issue is the responsibility of all parties on SCAO projects of EEP					
H-2	EHS documents properly provided on SCAO projects of EEP					
H-5	EHS training provided on SCAO projects of EEP					
S-12	EHS rules respected on SCAO projects of EEP					

(Please note the "NOTATION" above)

No	**Profitability**	SD	D	N	A	SA
S-13	Project outcome depends also on supervision activity of SCAO projects of EEP					
D-7	Late info has effect on project profitability of SCAO projects of EEP					

SECTION III :- Leadership

(Please note the "NOTATION" above)

No	Leadership Challenge	SD	D	N	A	SA
E-1	SCAO projects of EEP meet its objectives					
E-2	SCAO projects of EEP completed within budget					
E-3	SCAO projects of EEP completed within schedule					
E-4	Stakeholders satisfied on SCAO projects of EEP					
E-5	The overall quality of SCAO projects of EEP is high					