ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE

The Role of Leadership Attributes of Project Managers for Project Success: The Case of Ethiopian Electric Power

By: Elroi Birara
(ID No.: GSE/5607/11)

A Research project work submitted to Addis Ababa University School of Commerce in partial fulfillment of the requirements for a Master's of Arts Degree in Project Management

Advisor: Bahren Asrat (PhD)

Addis Ababa, Ethiopia
June 2021

ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE

The Role of Leadership Attributes of Project Managers for Project Success: The Case of Ethiopian Electric Power

By: Elroi Birara
(ID No.: GSE/5607/11)

A research Project work submitted to Addis Ababa University School of Commerce in partial fulfillment of the requirements for Master's of Arts Degree in Project Management

Advisor: Bahren Asrat (PhD)

STATEMENT OF DECLARATION

I, Elroi Birara, have carried out a research project on the role of leadership attributes of project managers for project success: the case of Ethiopian electric power independently in partial fulfillment of the requirement for the award of Master's degree in project management with the guidance and assistance of the research advisor, Bahren Asrat (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.

Elroi Birara: _____ _____

Signature Date

LETTER OF CERTIFICATION

This is to certify that Elroi Birara has carried out his thesis work on the topic entitled "The Role of Leadership Attributes of Project Managers for Project Success: The Case of Ethiopian Electric Power" 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 Project Management.

Bahren Asrat (PhD) _____ _____

Research advisor **Signature** **Date**.

ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE

The Role of Leadership Attributes of Project Managers for Project Success: The Case of Ethiopian Electric Power

By: Elroi Birara
(ID No.: GSE/5607/11)

A Project work submitted to Addis Ababa University School of Commerce in partial fulfillment of the requirements for a Master's of Arts Degree in Project Management

Signed by the Examination Committee:

Examiner: _____ Signature: _____ date: _____

Examiner: _____ Signature: _____ date: _____

Advisor: Bahran Asrat (Phd) Signature: _____ date: _____

ACKNOWLEDGMENT

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, Dr. Bahren Asrat, for the constructive comments, commitment, and engagement throughout 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. I would like to thank my mother; you have been supporting me throughout the entire process, both by keeping me motivated and helping me put the pieces together.

Table of Content

List of tables

List of figures

Acronyms

EEP	-	Ethiopian Electric Power
EEU	-	Ethiopian Electric Utility
PM(s)	-	Project Manager(s)
PMBOK	-	Project Management Body of Knowledge
PMI	-	Project Management Institute
GC	-	Generation Construction
TSC	-	Transmission and Substation Construction
SPSS	-	Statistical Package for Social Science.
EI	-	Emotional Intelligence
PPP	-	Public Private Partnership
MLQ	-	Multifactorial Leadership Questionnaire
S.D.	-	Standard Deviation
PS	-	Project Success
TS	-	Technical Skill
SS	-	Soft skill
EV	-	Ethical value
TRNF	-	Transformational Leadership Style
TRNS	-	Transactional Leadership Style

Abstract

The study has the intent to assess the significance of PM's leadership attributes for successful projects in EEP. By doing so, the study addresses the importance of the PM's personal traits, emotional intelligence, technical and soft skills, leadership style, and ethical value for the success of the implementation of projects in EEP. The methodology used for the study is a mixed approach using both quantitative and qualitative methods. Both primary and secondary data were collected to achieve the intended research objectives using a self-administered questionnaire survey and interview. Out of 50 questionnaires distributed to project managers, senior engineers, site mangers and design mangers engaged on different projects in EEP, 42 questionnaires were fully filled and returned. Descriptive and inferential statistics are used to analyze the PM's leadership attributes, project success, and their relationship. The study found a strong positive correlation between transformational leadership and project success, but a very low correlation between transactional leadership style and project success. Furthermore, the other 5 leadership attributes of the study, namely: personal trait, technical skill, soft skill, emotional intelligence, and ethical value, have strong association with project success in EEP.. The study concluded that leadership attributes of PMs are deliberately important for the success of the project in EEP. The study findings imply that EEP should be considerate of these leadership attributes in recruiting and empowering PMs and leadership should not be isolated from the organization's project management practice aiming at maximizing project success and developing empowered project leaders in the energy sector.

***Keywords**: leadership attributes, PM, project success, EEP*

CHAPTER ONE

INTRODUCTION

This study attempted to assess leadership attributes that affect the successful completion of projects in the case of Ethiopian Electric Power. In this chapter, the background of the study and organization, problem statement, study objectives, study questions, significance of research, and scope of the research are presented.

1.1. Background of the Research

Leadership is regarded as a critical component of management that aids in maximizing productivity and achieving organizational objectives. Even if organizations plan projects to achieve certain strategic goals that cannot be adequately addressed within the organization's functioning limits, project managers are typically supposed to have hard skills rather than to have a combination of different leadership attributes. Organizations acknowledge the importance of leadership attributes for all level managers of the functional structure, but when it comes to projects, the impact of leadership attributes of the project manager on the success of the project has been disregarded (Turner and Muller, 2005).

Given the importance of strategic projects, which consume a large financial outlay, they must be completed within preset success criteria. Different arguments and perspectives come forward to specify the criteria of successful projects. However, a project is commonly considered successful when it is achieved it objective on schedule, within budget, and within the agreed quality, in accordance with the specifications and to stakeholders' satisfaction (Assaf and Al-Hejji, 2006).

Over the past twenty years, research shows that there has been a different perception of what makes projects successful. In the 1980s, studies concentrated on the use of tools and methods. More recently, they have focused on risk management and governance support the project receives from the parent organization. Generally, research into project management has emphasized efficiency rather than behavioral or interpersonal factors. Despite progress in project management practices, lots of projects has been found to fail, with leadership being a major factor (Ellemers, DeGilder, & Haslam, 2014, Nziva 2018). This indicates that in order to enhance the number of successful projects, it is necessary to examine the factors that affect the project's success.

Gradually, there is an acknowledgment that leadership is basic to project performance (Adams, 2008). It is additionally affirmed that the role of the project manager is significant to project success shown by various studies in the literature (Yang et al., 2011). However, the literature has generally overlooked considering the project manager's leadership on project success as one of the keys to the project success factors (Turner and Muller, 2005).

The leadership attributes of the PM can play a crucial role. Leadership attributes comprise numerous constituents, traits, abilities, leadership types, and values. Although different leadership styles exist, they all require certain attributes to be effective. In addition, the study conducted in Kenya has identified leadership components, namely; leadership skills, leadership experience, leadership quality, and leadership styles can lead to a change in project performance by 69.5% (Momanyi N. Theophanus, 2020). Other studies (Mascia, 2012, Trivellasa and Drimoussisb, 2013, Ahmed and Vittal, 2017) have revealed the link between the different dimensions of leadership attributes of PM and project success.

The project managers should be equipped with the necessary leadership attributes to guide the project team to work effectively in the limited resources, constraints, and ever-changing environment. Therefore, there is an actual need to understand how the PM's leadership characteristic is linked to the project's success.

On the other hand, much focus has not been given to competencies, making project management results unsatisfactory, a challenge that is common in many industries across the globe (Ahmed and Vittal, 2017). Varies studies have been conducted in the context of road and building construction, IT, water & sanitary, NGO companies. When it comes to the energy sector, the project manager's profile in terms of educational background and working experience is considered as the focus area for the researchers.

It is well acknowledged that electricity is central to the development of any economy. Energy in the form of electrical power is vital for every aspect of organizational and individual sustainment. Esso and Keho (2016) found an inseparable relationship between energy consumption and economic growth in sub-Saharan Africa. The lack of electricity access is a key barrier towards social and economic growth in sub-Saharan Africa; its availability and access can be advantageous to alleviate poverty (Kulworawanichpong & Mwambeleko, 2015; Mentis et al., 2015).

Ethiopia has invested billions of dollars in power generation & transmission construction to maximize the generation capacity and range of reliable transmission of electric power all over Ethiopia. Currently, Ethiopia is generating less than 1% of its power generation capacity from different natural resources and only 33% of the country has access to electric power supply from the grid (EEP Magazine, 2019/2020).

By keeping the above-mentioned settings, investment, problems, and suggestions in mind, this study attempted to assess the importance of six leadership attributes of project managers for successful implementation of power generation, transmission, and substation project under Ethiopian Electric Power.

1.2. Background of the Organization

Ethiopia Electric Power is the government development organization in charge of Electric power generation, transmission, and wholesale electrical energy within the country as well as to nearby nations. EEP's vision is to be the first-class provider of high-quality electric power for the country, as well as a regionally interconnected competitive export industry (EEP magazine, 2019/2020). To achieve its vision, EEP is running more than 20 power generation and transmission projects, and 14 auxiliary projects.

However, the projects undergo from several snags that affect its budget, schedule quality and scope. One of these problems is the observed lack of leadership attributes of project managers. Even if the PM has the necessary educational background and years of experience, that’s why top management tends to replace the project manager whenever they see such kind of low performance of projects and complain from the PM’s immediate director and subordinates.

EEP has accumulated vast knowledge and technical capability for the last five decades, but the question is how the leadership experience has been developed to fulfill this massive responsibility given by the country? Why does EEP not achieve the performance as other government companies that were established after EEP, such as Ethiopian Airlines?

Currently, EEP has realized its limitations in this regard; it has started to develop a competency framework for each and every level of structure with the focus on attitude rather than knowledge

and skills. It was selected as a tool to implement the 2021-2025 strategy plans and translate the company's vision.

According to this competency framework, every manager is expected to have the five leadership competencies of performance, decision making, organizing, developing others, and change management, and project managers will have an additional competency based on the type of project because functional and project managers have different roles in the same way that operations and projects do.

1.3. Problem Statement

Leadership is an effectual tool for the PM to use, and it has a adequate impact on project outcomes. Otherwise, failures of projects are linked to a lack of leadership attributes directly (Nixon et al., 2012). The PM's personal leadership attributes, which are considered intangible factors and their influence on project success, are generally lacking (Shi & Chen, 2006). It implies that the leadership attributes of project managers have been disregarded unintentionally.

Besides, PMs are currently more managers of people than they are managers of technology (Kerzner, 2010). Such activities like building trust, respect, motivation, and effective communications lie within the realms of the leadership domain. The research from South Africa shows that ‘interpersonal factors’ were considered the most important category, followed by ‘application of theory’. (Colin G. & Michiel B., 2015). However, the importance of leadership characteristics as PM needs has received less attention. Walker and Walker (2011), while disputing the current method of project delivery, emphasized the need for a re-examination of the skills and attributes required by project managers, particularly in the realms of soft skills, communication, and relationship skills, as well as those skills related to emotional intelligence.

The other cause of poor project leadership is the leadership styles adopted, which sometimes may not be consistent with the goals and visions of projects Oyaya (2017). Further, Aggarwal, Tanner and, Castleberry (2004), support this claim by observing the leadership style is found to be the main reason which has a direct impact on employees’ turnover intentions. "Employee leaves the boss not the workplace". Besides, leadership requires an understanding of societal values and norms. Without ethics, certain project leaders might have made serious errors that have hurt others,

tarnished their own reputations, and jeopardized the public-government bond of trust. As a result, a good leader's inner core must be based on ethical reasoning and a solid moral anchor.

Despite the fact that interest in project management has increased, projects have kept up their failure at large and their complexity and uncertainty remain to grow (Dias et al., 2014). Given the significant investment made in the project itself, project management training, and other project management systems and processes, there are projects that continue to fail when it comes to meeting the predetermined success criteria.

Studies are usually conducted in road/building construction organizations, IT projects, and NGO projects. Little literature has been addressed in this regard. The CCL study has indicated that the top priorities for leadership development in the energy sector are to improve the ability to direct employees, problem-solving skills, and coordinate teams. The derailment factors that were problematic for energy leaders were difficulty building and leading a team, too narrow functional orientation. It was suggested that energy organizations should help their current and upcoming leadership pool to think strategically about developing the skills and viewpoints needed to grow and succeed in the industry (E. Wayne, Jamie P., Cory L., and Jessica G., 2009)

Apart from the importance of energy sector projects to Ethiopia’s social-economic development, the amount of resources invested, and the fact that the utility of these projects depends upon successful completion, the performance of most projects in the energy sector has been poor with the majority experiencing time and cost over-run.

The Strategic plan report shows that the Debt to EBITDA ratio, Debt to Equity ratio, and Debt Service Coverage Ratio of EEP financial performance for 2019/2020 year is 58.26%, 65.07%, and 0.01% respectively, which implies the organization is in distress with too heavy loan load and with lower loan reimbursing capability. Thus, the project has to start to be fully successful and return the invested monetary value; otherwise, it results in extended loss to the country.

Despite the fact that half of the gaps/pains identified as an organization are directly related to lack of leadership capability (strategic plan, 2020), any leadership-related factor is not identified as one of the critical success factors of EEP's construction projects except the 'top management support' factor. (Wudineh Y., 2017). This implies that even though the impact of leadership attributes of the PM on project success is very significant in prior research and even through studies conducted by EEP confirm that lack of leadership capability has an impact on the overall performance of the

organization, the project managers of EEP have not recognized the significance yet. In addition, many generation and transmission projects in EEP suffer from prolonged delay, quality issues and cost overrun and they attribute the cause problem for this lack of successful completion of the project to factors other than leadership attributes, factors that are outside of the project team.

1.4. Research questions

- To what extent do leadership personal traits of project managers contribute to the success of power generation & transmission construction projects?
- To what extent do technical and soft skills of project managers contribute to the success of power generation & transmission construction projects?
- To what extent does emotional intelligence of project managers contribute to the success of power generation & transmission construction projects?
- To what extent does leadership style of project managers contribute to the success of power generation & transmission construction projects?
- To what extent does Ethical value of project managers contribute to the success of power generation & transmission construction projects?

1.5. Research Objective

1.5.1. General Objective of the Study

The overall objective of this research is to assess the current leadership attributes of project managers that have significate role for the success of power generation and transmission construction projects under EEP.

1.5.2. Specific Objective

- To assess the extent leadership qualities of project managers contribute to the success of power generation & transmission construction projects
- To assess the extent soft and technical skills of project managers contribute to the success of power generation & transmission construction projects
- To assess the extent emotional intelligence of project managers contribute to the success of power generation & transmission construction projects
- To assess the extent of leadership style of project managers contribute to the success of power generation & transmission projects
- To assess the importance of ethical value of project manager contribute to the success of power generation & transmission projects

1.6. Significance of the Study

There are various beneficial outputs expected from this study. In particular, EEP can benefit from research as it helps to recognize project success factors from a leadership perspective to identify focus areas. It provides insight and input to consider leadership competency and attributes that improve the recruitment and selection process and assist to identify PM's development, to increase the project team and PM's productivity and effectiveness. Furthermore, the research can also help decision-makers of EEP to reconsider policies and procedures intended to implement projects and recruitment of PM.

Understanding the leadership attributes that are closely tied with project success is imperative and can make a monumental contribution to the knowledge base about projects. In addition, generally, as there is a shortage of literature related to leadership qualities of project managers and projects' success criteria, particularly in the energy sector and in the EEP's context; this study, therefore, contributes its piece to address this gap. This study also means to offer practical and theoretical further research questions that can become a useful study bases for future researchers related to the energy sectorial projects and the leadership attributes.

This study has implications for project managers and program directors so that they can understand their strengths and weaknesses and develop such kinds of attributes to be competitive in the market.

1.7. Scope of the Study

Leadership along with project management is a large subject to research. This final project is limited to critical leadership attributes of PMs that contribute value to project success. It focused on project leadership from the perspective of the project leader, rather than from the perspective of the organization.

This study aims to assess the PM's leadership attributes, namely personal leadership trait, soft and technical leadership skill, leadership style, emotional intelligence, leadership ethical value, and their importance for the successful projects of EEP.

Power generation construction and transmission construction projects of EEP are dispersed all over Ethiopia and one project has interconnection with neighboring countries Kenya. For all projects under progress, there is a project management office situated at EEP headquarters and at Kotebe training and development center. The study targeted executive officer, PMs, directors, senior engineers and site mangers who are responsible for the implementation of those projects.

Explanatory research designs with descriptive tools are selected for assessing leadership attributes of project managers of EEP. The researcher has implemented the census method for more reliable results. Therefore, all 54 directors, site mangers, project managers and senior engineers are targeted for this study.

Qualitative and Quantitative approaches are used to collect data using a questionnaire and interview. A questionnaire survey is used to collect data because it has the benefit of providing standard replies from a large number of respondents. The study has a cross-sectional nature. The research tried to capture the perspective of PMs in a onetime recap rather than following a longitudinal approach.

1.8. Limitation of the Study

The organization structure and staff plan was in the development process especially the construction executive office has been restructured by rearranging many projects in one project office and they assigned the many project managers to another commitment. Thus, identifying the exact number of project managers and directors has been challenging since they have not completed the restructuring process till the data gathering period.

1.9. Organization of the Study

Introduction; literature review; research methodology; findings and discussion; and summary of findings, conclusion, and implications are the five chapters of this study. The following are the topics covered in each of these chapters:

The research's background is covered in Chapter 1, as well as the study's core themes, such as leadership styles and project performance. The chapter also discusses EEP projects, the research challenge, the research aims, and the rationale for the study.

Chapter 2 provides a review of literature that explains the key study variables and their relationship from related prior studies. The chapter also contains a summary of empirical studies and theoretical structure.

The research's methodology, design, population and sample, data collection tools, measurement instrument of reliability and validity, and data analysis procedures are all covered in Chapter 3.

Chapter 4 provides analysis, data presentation and discussion of the results of the study.

Chapter 5 includes summary of findings, conclusion of the research and recommendation.

1.10. Definition of Key Terms

Leadership: "the ability to influence a group toward the achievement of a vision or set of goals." (Robbins and Judge, 2015)

Project management: "the application of knowledge, skills, tools, and techniques to project management undertaking with the goal of achieving the established objectives". (PMI, 2008)
EI: is the ability to identify, use, understand, and manage emotions in positive ways to relieve stress, communicate effectively, empathize with others, overcome challenges, and defuse conflict. PMI, 2008

According to Hewitt (2008), soft skills are "non-technical, intangible, personality-specific skills" which determine an individual's strength as "a leader, listener, and negotiator, or as a conflict mediator".

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Based on the research question, this section assesses several theories, notions, and researches that exist on the subject. This chapter reviews the various theories, concepts, and studies that exist on the topic based on the research question. Kinds of literature are obtained from a variety of secondary sources including books, articles, government documents, and corporate reports, and related websites. This literature resulted in establishing the core concept and theory of the study, thereby creating a road map for the research.

2.1. Leadership Theories

In the field of project management, leadership and learning are mutually indispensable (Kennedy, 1963). Leadership qualities are acquired and accumulated over time; most people are not born with all of the skills required to be effective leaders. Leadership Theory throughout the previous century, scholars desired to describe the characteristics of leadership and, by extension, leadership style. There are six main schools of leadership identified, as summarized in Table. 2.2.

Table 2.2.: Summary of leadership frameworks (condensed from Turner and Muller, 2005)

Trait theories	These theories, which claimed that successful leaders shared characteristics such as drive/ambition, desire to lead, integrity, self-confidence and technical knowledge, remained famous until the 1940s and, supposed that leaders are born not made. Kirkpatrick and Locke (1991); Turner (1999).
Behavioral theories	From the 1940s to the 1960s, behavioral theories claimed that leaders could be created by adopting particular behaviors such as concern for people, use of authority, concern for production, team participation, and rule flexibility. It includes Laissez-faire, democratic, and autocratic leadership styles (Hershey & Blanchard, 1988; Slevin, 1989)

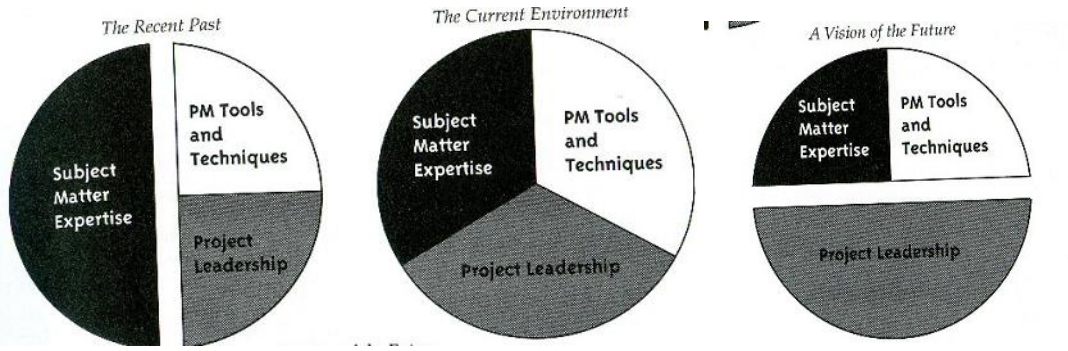
Contingency theories	These theories remained at the center of focus during the 1960s and 1970s and suggested that the success of a leader was dependent on the situation. The leadership should be selected according to the environment and subordinate factors. Leadership styles include Directive leaders, Supportive leaders, Participative leaders, Achievement-oriented (House, 1971)
Visionary or charismatic theories	During the 1960s and 1970s, this visionary school of thought was famous and The leadership styles are classified based on their approach to process and relationships. Focus on the nature of the company and the relationships between individuals. Different leadership styles have different effects on the obligation, momentum, and stress levels of their followers. Leadership style: Transactional and transformational leadership styles (Bass 1990)
Emotional intelligence theories	These were well known in the late 1990s, and they indicated that emotional intelligence, rather than intellectual abilities, had a greater impact on a leader's personal success as well as that of his or her team. Visionary, Coaching, Affiliate, Democratic, commanding, and Pacesetting leadership styles are characterized by self-knowledge, self-control, social awareness, and relationship management. Goleman (1995), Boyatzis (2002), and McKee (2002)
Competency theories	These theories gained traction in the late 1990s, and these concentrated on the competencies of effective leaders rather than their traits, implying that these competencies could be learned and thus leaders could be made. It entails intellectual, managerial skill, and emotional competence, as well as the following leadership styles: commanding, engaging, involving, and goal-oriented. If the right leadership style is chosen, different leadership styles may boost project success (Dulewicz & Higgs, 2004)

2.2. Leadership and Project Management

The application of knowledge, skills, and techniques to project activities in order to meet the needs of project requirements is known as project management (PMI, 2008). These undertakings necessitate a PM who understands and assimilates the objectives and constraints of the project, as well as the interest and influence of each stakeholder. PMs have the highest degree of accountability for managing and executing the project and achieving desired outcomes. To successfully manage a project, project managers must be able to apply behavioral, technical and intellectual resources and leadership attributes effectively. Leadership is getting things done through others (Gido and Clements 1999), which means the PM attains project deliverables through the project team. In other words, inspiring, guiding, and directing people assigned to the project work as a team to achieve the project objective.

Even if project management and leadership go hand-in-hand, it is important to differentiate the concepts to clarify the character, effectiveness and, implications in the project context. Davis (1967) differentiated project leadership as a part of management but not all of it. Management includes tasks such as planning, coordinating, managing, and making decisions, among others. It may be argued that good management is impossible without good leadership (Hyvari, 2006). Currently, the leadership skill factor has crucial value in project management. The figure below depicts the trend toward leadership in project management.

Figure1: Project management skills for success (Richman, 2006)



As the project proceeds, the project manager will both manage the project as well as lead the team. PMs, according to Verma and Wideman (2000), are often called to be both managers and leaders. That is to say, they are in charge of not only directing and coordinating human and material

resources, but also inspiring and motivating project team members in order to provide the best environment for the project team to achieve optimum productivity through synergy.

Table 2.1: Difference in leaders and managers (Nahavandi, 2003. Van Zyl, E, 2009)

Leader	Managers
Provides vision and strategies	Implement that vision and strategies
Press for change, anticipated environmental changes	Maintain the status quo, not taking the initiative
Create a culture based on shared values	Remain aloof to maintain objectivity
Establish an emotional link with followers	
Empowering people	Concerned with being empowered
Concerned with the dynamics of a situation, concerned with setting or changing the culture.	Concerned more with techniques, adapting to the culture.
Understands personal strengths and weaknesses, and is willing to learn from mistakes and grow.	avoid risk for self-protection

2.3. Leadership Attributes

By definition, a project climate is dynamic. Even if the project was planned with this changing environment in mind, the project and the project team may benefit or suffer as a result of unforeseen opportunity and threat from the changing environment. Project management is a responsibility that necessitates the use of effective leadership skills and characteristics by those tasked with it in order to ensure the project's overall success, both project teams and specialized organizations gain from this.

Leadership is essential for ensuring that the projects succeed, from team management to project governance. In order to direct a team, the project manager must show a variety of skills and behavior. In project management, leadership is a necessary skill for bringing the project to a good conclusion. Project leadership, like leadership in other fields of industry, is a tool to guide a team

for the effective completion of a project. Leadership attributes involve leadership traits, skills, styles, and qualities. Previous studies, so far, have found that project leadership attributes are positively linked to project success (Trivellasa and Drimoussisb, 2013 and Geoghegan et'al). These related literatures are discussed in the following section.

A. Personal Trait

Competencies are personal characteristics that lead to higher performance. Experts (i.e knowledge, skill, aptitude, personal, self-concept, value) sometimes refer to these characteristics as personal traits. Personal traits may thus be described as the outward or obvious facets of a person's characteristics. According to Kerzner (2010), the project manager's personal characteristics account for a large portion of project efficiency. As an individual, and project manager has a unique set of habits, attributes, interests, values, and abilities. Furthermore, the project could not be done successfully until any of them were implemented (B. Bass, 1985).

Several researches (Bass (1990), Conger (1992), DuBrin (l998), McCall (1998), Phillips (1992), Poole (1998)) come to an agreement upon particular characteristics that are important for project success. Of the noted characteristics may be categorized as either an inborn or an acquired trait. Farsightedness, easy access to team members, result-oriented, enthusiasm, persuasiveness, and social adaptability are among these personal characteristics.

Other studies have looked into the links between PM personality qualities and project management(Muller, Geraldi, & Turner, 2012). Result orientation, farsightedness, and persuasiveness were found to be most determinants from the personal traits items of project success.

B. Emotional Intelligence

Emotionally intelligent project managers, according to Clarke (2010), are well equipped to empower fellow project teams, stimulate higher levels of motivation and dedication to progress, and to overcome the unique challenges and issues that each new project brings. Since employees will also mirror the behavior of their bosses, leaders must be self-aware of how their subordinates view their behavior (Moment, 2007).

Emotional intelligence includes factors like the degree of personal (self-awareness, self-management) and social (social awareness, relationship management) competencies of PMs (Goleman, Boyatzis and McKee. 2002).

Self-awareness, self-management, social awareness, and relationship management of PMs are included in emotional intelligence (Goleman, Boyatzis and McKee. 2002). Self-awareness, which includes self-awareness, accurate self-awareness, and self-confidence, has a significant influence on project success factors. The study conducted in Ghanaian further revealed that leadership confidence constitutes the most important indicator of project success; whilst self-accuracy is driven by schedule, compliance contributes the most to international development project success (Emmanuel Dwamena Sasu, 2018). Thus, emotional intelligence for project managers entails understanding and managing one's own and others' emotions in order to maximize project success.

C. Soft Skill

Based on the study findings, the most suitable project management skill to enhance project success in the construction industry is leadership. Soft skills are the traits and abilities of attitude, and behavior rather than of knowledge or technical aptitude (Tobin, 2006). Soft skills are not a replacement for hard or technical skills; rather, they function as harmonizing skills that assist people with good hard skills access the potential for highly successful success. Technical knowledge and business expertise are not worth much if leaders lack the social skills to put it into action.

PMBoK Guide (2004) classifies soft skills like interpersonal skills, communication, Motivation, negotiation & conflict Management, and problem Solving is among the interpersonal skills listed. Details of these abilities described as follow.

According to Mehta, (2012) PMs with communication skills facilitates communication between the team leader and PM and the staff in the event of any issues on tasks that can be done rapidly and efficiently. Interpersonal skill is also a critical component of achieving project performance criteria; it includes the ability to deal with individuals from various cultures, and entails the ability to form relationships with various types of people when necessary (Joni Keränen, 2018). It also necessitates persuasion, motivation, and incentive abilities.

Brenton & Levin (2012) stated that coordination skill is an ability to build harmonized relationships to meet project objectives. Disagreements can be discussed constructively and in turn boost team motivation that expedites the project progress.

Also, Successful project leaders develop and grow their team. They build strong relationships with and between team members, leading to positive social interactions (Prati et al., 2003). Leadership can reinforce team bonding and enhance teamwork by exercise of soft leadership skills as it creates synergy (Walker & Walker, 2011).

For a leader it is necessary to know how to distinguish the source of the problem, identify practical solutions and how to solve a problem (Odusami, 2002). Gushgari et al. (1997), applying decision making to project management, defines it as the "ability to take appropriate action under the constraints of limited time, information, and resources".

According to Thoms & Pinto (1999) Project management demands that individuals in PM positions must have well-developed temporal skills, including time warping, creating a future vision, chunking time, polychronicity, predicting, and recapturing the past by its nature.

D. Technical Skill

Project managers in the construction industry are required to have technical/theoretical knowledge and test it in practical applications, or to support substantive experts. Goodwin (2006) described technical expertise as important and valuable project management ability and elucidated why it is worthwhile to investigate the degree to which technical skill is an criterion for the PM. Ives (2004) listed technical capabilities as one of the project manager's performance attributes. The project management skill areas that were studied in this research are: budgeting skills, planning and schedule skills, quality management skills, risk management skills, stakeholder management skills, and people management skills based on project management knowledge area as described in the PMBOK Guide.

E. Leadership Style

Each manager/leader has their own leadership style; others are more transparent and participative, while some are more assertive. When dealing with subordinates, a leader's leadership style is a reasonably consistent pattern of behavior (Amirul, et al, 2012). Transactional, transformational,

authoritarian, democratic, participative and laissez-faire leadership styles are among them (Belout & Gauvreau, 2004).

Transactional leadership has been the traditional style of leadership. It considers the relationship between the leader and subordinate as one based upon exchanges, or "transactions". The theory assumes that when the chain of command is clearly defined, the performance of followers is maximized (Waller et al., 1989). The focus is on tactics such as followers receiving recognition if they fulfill the directions of the leader and achieve objectives; they receive negative punishment when performance falls short of expectations (Boseman, 2008). These studies have further shown that Transactional leadership has also been seen to have a positive effect on the desire to achieve goals and "get the job done," but it may also have a negative impact on employee productivity, imagination, and enthusiasm due to a preoccupation with authority, status, and politics.

A transformational leader, on the other hand, "transforms" the workplace by empowering teams and people to reach a high level of success by encouraging and improving others. Via a sense of purpose and a universal mission and vision, transformational leadership facilitates the achievement of high mutual values (Bass, 1990). In Leadership and Performance above Expectations, Bernard Bass introduced Burns' philosophy of converting leadership into transformational leadership, in which the leader transforms followers. According to Bass, the path of power is one-way, while Burns sees it as a two-way mechanism. To win followers' confidence and support, transformational leaders must still be role models and "walk the walk," even in the most difficult situations. Intellectual stimulation, imagination, and inventiveness are also essential to the transformational leader (Grossman & Valiga, 2009).

According to Anderson et al., transformational leadership has been proposed as the most effective style of leadership (Dean & Bowen, 1994), and it is more linked with subordinate's performance and motivation (1995).

F. Ethical value

"Ethics leads to trust, which leads to leadership, which in turn leads to project success" Michel Ombrophyte

Ethics is not about the policies or rules and the regulations; it is about the making the best possible right decisions leaders need to take concerning the resources, and, the individuals. According to

PMI, project management ethics is an essential component while managing projects to come over successful completion. Besides Honest, respect, Responsibility and fairness are values that drive ethical conduct for the project management professionals.

The values-base that the leader advocates for the subordinates' goods is a reflection of the leader's own ethical values (Daft, 1999). "Leadership by values" code of Confucius, the leader brings unity and stability to their organization through leading by example and by the force of their values (Fernandez, 2004). The research on Value Based Leadership and ethics in construction (Moylan, 2005) demonstrated a strong correlation between values-based leadership concepts, values, skills, and sound ethical conduct as critical performance components in the astute managing of constructed facilities projects.

Studies shown that poor leadership and corruption in the design, contracting, estimation and implementation of projects have seen projects balloon in costs, rack up time overrun become too costly for governments across Nigeria which have led to abandonment and failure (Sonuga et al. 2002). Furthermore, Project failure has been established to be ignited due to financial and leadership-related challenges across Nigeria owing to corruption and financial issues (Eneh, 2011).

2.4. Project Success and Project Criteria

During the 1980s and 1990s, the quality of the planning and hand-over was identified as important. Lists of Critical Success Factors (CSF), which also took into account organizational and stakeholder perspectives, became popular. More recently, CSF frameworks were developed on the basis that success is stakeholder-dependent and involves interaction between project supplier and recipient. Additional dimensions taken into account were the project product and its utilization, staff growth and development, the customer, benefits to the delivery organization, senior management, and the environment.

Different arguments and perspectives come forward to specify the criteria of successful projects. A project, on the other hand, is generally regarded as successful when it is accomplished on the agreed-upon specification and constraints, in accordance with the requirements and to the satisfaction of the stakeholders (Assaf and Al-Hejji, 2006). “The performance of the project should be measured in terms of completing the project within the constraints of scope, time, quality,

resources and risk as agreed by the project managers and senior management," according to the PMBoK (2013).

The terms "project success" and "project management success" are not interchangeable. Project success is estimated against the project's overall objectives, whereas project management success is estimated against performance indicators such as meeting constraints. (Cooke-Davies, 2002)

According to Van der Merwe and Hauptfleisch (2012), the performance factors are divided into four categories based on management principles: human management, process, organization, and a contractual and technical category depend on the execution of a construction project. They describe project performance as achieving the success criteria ("What to achieve") through the success factors ("How to achieve").

Mertens et al. (2018) stated that project success is related to the goals and benefits that provided in a project for the organization as a whole, dealing with the project's effectiveness, objectives, and benefits, and project management success is related to the direct actions taken by a project manager, using tools as determined by the scope, deadline, and cost of the project. Müller and Turner (2007) also investigated the impact of project managers on project success criteria. The study states, that having a certified project manager lead a project is not a guarantee of completion, but it is important for success. Thus, the project manager and his or her leadership style and expertise are rarely mentioned in the literature on project success factors.

Thomas D. (2011) did a research on the link between project management leadership and project success. From the study, he concluded that project leadership competency and styles must become a normal part of every activity carry out by PMs, resulting in considerable gains in project performance and high levels of productivity in project contexts.

Regarding leadership as a factor of project success, Geoghegan and Dulewicz (2008) and Jiang (2014)'s research showed that not only are leadership traits associated with successful project managers but leadership traits are a contributing factor towards success in projects, of course leading to successful project managers. According to these studies, project success can be negatively affected if the wrong leadership style is selected and/or the project manager lacks experience with the project type.

2.5. Review of Empirical Studies

This section focused on empirical evidence from local and foreign countries' studies that illustrates relationships among PM's leadership traits and their impact on the successful completion of projects.

Kaleb (2017) has studied the impact of PM leadership attributes on project success in the case of Ethiopian Road Authority (ERA) and concluded that all leadership attributes were positively correlated with project success. The most important factor among the PM's leadership attributes is his or her personality trait, which is followed by emotional intelligence, soft leadership skills, and technical leadership skills, in that order.

According to Tsion, (2019) soft leadership skills were identified as the most statistically significant determinants of the successful completion of projects. The technical skill, personal trait and EI of project leader have higher level in terms of their impact on project performance; besides, the coordination skill of the project manager is the most critical soft skill for project success.

The study conducted in Kenya on the industry show that leadership components such as leadership skills, leadership experience, leadership quality, and leadership styles will result in a 69.5 percent improvement in project performance (Momanyi N. Theophanus, 2020). To enhance project time performance, project manager's leadership style is critical and managers should strive to intellectually inspire project team members. (James T., 2018). The study from Nigeria also identified effective communication, accessibility, intelligence and competence among others as the relevant leadership traits.

Colin Gewanlal & Michiel Bekker, (2015) findings revealed that the most important category was 'interpersonal factors' followed by 'application of theory'. 'Personal contribution' and 'personal character' were deemed the least important categories. Project manager attributes influencing project success in the South African construction industry,

From other parts of the world, recent research conducted has provided empirical support that project manager's leadership attributes on project success.

Arendse (2013) stated that leadership attributes like personal traits and soft skills were among the causal factors of project success. Personal characteristics of project managers and project

management attitudes are highly significant for achieving project success (Blaskovics, 2016). Thus, among the leadership traits listed, the leader's personal characteristic was found to contribute the most. Emotional maturity was considered to be the second most important leadership trait. Successful leaders, according to Herkenhoff (2004), are required to both the intellectual and emotional capacities to motivate and identify with others are required to meet cognitive problems in environments of strategic change.

Prior research (e.g., Byrd & Turner, 2001) identified the requirement of both technical and soft skills as important factors of project success. while it appears that technical leadership was not as momentous as other PM leadership attributes in predicting success, its importance in the literature still draws to the assumption that a PM's technical skill will have a positive impact on the degree of success he or she achieves.

Project managers with high emotional intelligence who bear the desired competencies and exhibit transformational leadership behavior are effective leaders and ensure greater projects success than their counterparts ensure. (Rashid M. Ye Sudong, nasir M.,Yahys R., 2017).

Personal characteristics such as result orientation/focus and persuasiveness of the PM were found to have a strong correlation with project performance, according to the findings of Muller, Geraldi, and Turner (2012). From the results of the study conducted by Tsion, (2019) it can be seen that foreseeing has a great impact the successfulness of the project. Additionally, how easy the access of the PM is to the team project is another major factor affecting its success.

The most important Soft skills found were like temporal skills, problem finding, analyzing, solving, team building, and delegation and coordination skills were identified. The other set of skills that have high impact on the success of projects were communication, coordination, interpersonal relationships and teambuilding. (Geoghegan et'al)

While conducting an analysis of the effect of PM's soft leadership skills on project performance, Manazar et'al discovered that the impact of communication skills, teamwork skills, and problem solving and analyzing skills on the project success is high; followed by interpersonal skills and team building skills. Similarly, Manazar et al discovered that the strongest relationship exists between project performance and communication skills, teamwork skills, and problem-solving and evaluating skills.

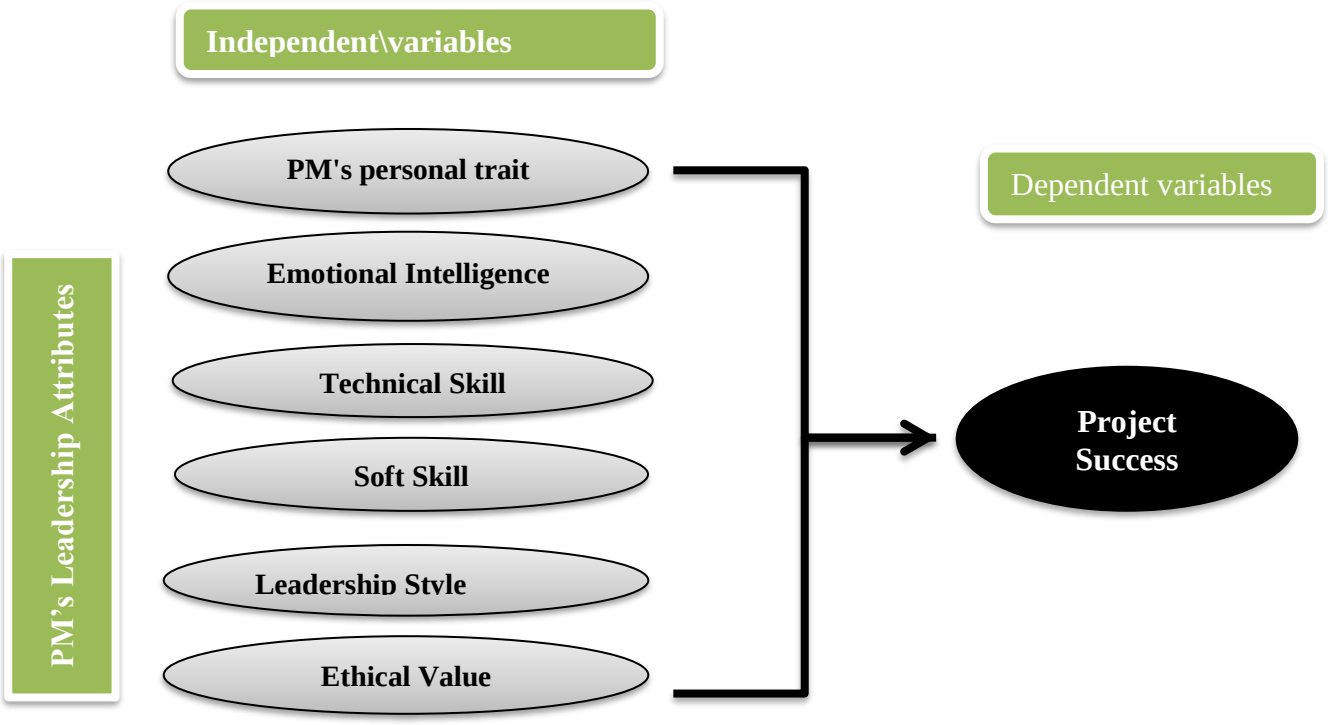
Other studies like that of Trivellasa and Drimoussisb (2013) showed that self-awareness of the PMs was high in successful projects. Other than this trait, these PMS were also equipped with a high level of emotional intelligence and social awareness. But in a relative manner these PMs have a lower level of relationship with the management.

When we come to leadership style in connection with project success, Jiang's (2014) research found support for a link between a project manager's leadership style and the project manager's influence, if not control, over project success factors (Jiang, 2014). A basic model was developed in Jiang's research to show how a project manager's leadership influences teamwork, which in turn influences project success.

2.6. Conceptual Framework of Study

The framework incorporates the findings of leadership theorists and project management scholars within a contingency approach as described by Ika (2009) as well as project management scholars within the competing value framework approach by Dulewicz & Higgs, (2004). The framework shows the variables of the study as follow:

Figure 1: Study's Conceptual framework



CHAPTER THREE

RESEARCH METHODOLOGY

The methodology used in the study is briefly described in this chapter. This chapter discusses the research design, data sources, data collection techniques and study population.

3.1. Research Design and Approach

This research used explanatory research design with descriptive tool. The research used this design as it explains the relationship between the leadership attributes with successful completion of power generation & transmission projects.

A descriptive tool was adopted to address the research question because in descriptive design the study uses correlation, linear regression analysis as well as multiple regressions. Researcher has no control over the variables. It either explains the nature or matters as it currently exist, or he or she will write on what has occurred or is currently occurring, and it is fact-finding in the moment (Saiyadain, 2003). Aside from that, this method of study includes an integrated description of a sensation in relation to its context, based on existing hypotheses and theories (Saunders, Lewis and Thornhill 2009).

The study used both quantitative research and qualitative research approach in order to investigate the problem by covering each method's weaknesses with strengths from the other method (Mark et al. 2009). Mixed research approach is suitable for establishing leadership attributes of project managers of EEP in relation with project success. Analyses of specific variables that are related to the success of projects were done in order to find answers to raised research questionnaire. For this purpose the fore mentioned design was used. In conducting the study a questionnaire was adopted from kaleb (2017) and Alem (2019). From this questionnaire a quantitative data was obtained. And for the analysis of these data a qualitative approach was used. Deductive interview analysis is adopted to analyze the qualitative data from interview. Besides secondary data analysis is used to triangulate the result by giving context and evidence.

3.2. Description of study variables

The personal traits comprised of farsightedness, accessibility, result-oriented, enthusiasm, persuasiveness, and social adaptability (Bass (1990), McCall (1998), Phillips (1992), Poole (1998). The soft skills includes related to communication skills, interpersonal skills, coordination skills, problem-solving skills, temporal skills, and Team building & delegation abilities (PMBoK Guide (2004). The technical skills are based on the knowledge areas/project management processes that were listed under the PMBOK Guide (PMBoK Guide (2004). Emotional intelligence includes two competencies i.e. the personal (self-awareness, self-management) and social (social awareness, relationship management) competencies of PMs (Goleman, Boyatzis and McKee. 2002). Regarding leadership style, the study only focused on transformational and transactional leadership styles. Transformational leadership comprises idealized influence (attributed and behavioral), inspirational motivation, intellectual stimulation and individualized consideration (Grossman & Valiga, 2009). Transactional leadership style includes contingent reward leadership, management by exception (active) and management by exception (passive) Tejeda et al 2001; Avolio & Howell, 1992; Yammarino & Bass, 1990. Ethical value also includes responsibility, respect, honesty and integrity, and fairness (PMI, 2008).

Accordingly, the project success criteria considered in this research are time, cost, and quality/specification and stakeholder satisfaction (PMBoK 2013).

3.3. Target population

According to the EPP report (2020), there are currently running 4-generation construction and 19 power transmission and substation projects, and other auxiliary projects EEP. EEP is the client of these projects and it has a project management unit for projects undertaken. Thus, the study targets EEP's project managers and directors of the currently active power generation and transmission projects. The researcher has implemented the census method because the total number of project managers, site managers, senior engineer (Above D5 grade as per the company scale) and directors at EEP is of manageable size (ANNEX-IV). Therefore, the fact that the researcher used the census method enables her to get a reliable result from the study.

A census investigation is a complete enumeration of all the things in the 'population.' It is reasonable to assume that since all of the elements are shielded, there is no factor of chance left, and the highest accuracy is achieved (C.R. Kothari, 2004). Therefore, all 54 site managers, project managers and directors (4) are targeted for this study.

3.4. Data collection

In order to extract data from the resources, primary and secondary data collection tools were used in the research. In the primary data collection, questionnaires are prepared. These questionnaires were self-administered to the EEP Project team's managers, site managers and, directors. This method was selected because questionnaire survey allows to gather data from people who are in different parts; geographically. In the meantime, large number of respondents can be addressed.

The questionnaire's elements were drawn from previous research (Kaleb T., 2017 & Alem S. 2019). The adopted elements have been subtly revised to be aligned to the setting of the study. There are two parts in the questionnaire. In the first part of the questionnaire demographic data was collected. In the next part data for evaluating factors is gathered. The second part is a five-point Likert scale varying from "strongly disagree" to "strongly agree".

In addition, Interview was conducted in order to collect qualitative primary data so as to explain the leadership qualities and behaviors in related with project success. The secondary data from contract documents and different kinds of reports were interpreted to give the context and subjective meaning of the study findings particularly the current performance of the project.

3.5. Data Analysis

The study analyzes the data from respondents through a questionnaire by using the SPSS version 20.0 software tool. The open-ended interview is examined by grouping the respondents' common concepts into a generalized structure. The researcher used tables to show data gathered from primary sources, which were provided in the form of mean and SD. The study employs descriptive statistics, inferential analysis such as correlation, linear, and multiple regression analysis to investigate the link between project success (dependent variable) and each of the seven identified components (independent variables).

Data analysis, according to Kothari (2004), is the computation of particular indices or measurements as well as the search for patterns of association between data sets. Analysis entails estimating the values of unknown population characteristics, particularly in the case of survey approach. As a result, descriptive and inferential analyses are two types of analysis.

In this study, descriptive analysis was used to describe the respondent's characteristics and to meet the first research question (To what extent do PMs have leadership qualities in EEP?), Frequency distribution (percent), central tendency (mean), and dispersion (standard deviation) were used to answer the first research question. Accordingly, to determine the link between variables (leadership attributes of PM and project success) Correlation analysis (Pearson's Product Moment Correlation Coefficient) was used.

To determine the extent PM's leadership characteristics contribute to the successful completion of projects in EEP simple linear regression analysis and multiple regression analysis were used. Accordingly, the linear regression model is; Y=a+bx; Where, Y=project success (PS), a=y-intercept, b=the regression coefficient or beta weight of PM's leadership attributes (LA), x = PM's leadership attributes (LA).

Multiple regression analysis was used. Accordingly, the regression model for this statistical analysis is; Y=a+b1x1+b2x2+b3x3+b4x4+b5x5+b6x6+b7x7; Where, Y=PS, a=y-intercept, b1=the regression coefficient or beta weight of TP, x1=TP, b2=the regression coefficient or beta weight of TS, x2=TS, b3=the regression coefficient or beta weight of SS, x3=SS, b4=the regression coefficient or beta weight of EI, x4=EI, b5=the regression coefficient or beta weight of TRNF, x5=TRNF, b6=the regression coefficient or beta weight of TRNS, x6=TRNS, b7=the regression coefficient or beta weight of EV, x7=EV.

3.6. Reliability and validity

In order for the instrument to genuinely measure what it aims to measure, the researcher tried to adapt instruments from two similar literatures in accordance with the study's subject. The researcher connects the questions to the study's goals before designing them. An effort has been made to ensure that the data collection instrument's material validity is ensured. The study addressed the survey instrument's quality validity by observing at previous research, describing each attributes in clear terms to assist understand the terminology.

A typical way is to check for consistency or reliability, which is typically stated as the Cronbach coefficient. Usually, anything between 0.7 and 0.8 is considered appropriate (Nunnally, 1978). Thus the instrument found reliable for measuring leadership attributes of PM's at EEP.

Table 3.1: Cronbach's alpha test result

Reliability Statistics	
Cronbach's Alpha	N of Items
.965	52

Source: own survey, 2021

Table 3.2: Reliability statistics for dependent and independent variables

Reliability Statistics		
Independent Variable	Cronbach's Alpha	N of Items
Personal Trait(PT)	.724	6
Technical Skill (TS)	.830	6
Soft Skill(SS)	.828	6
Emotional Intelligence (EI)	.781	4
Transformational Leadership style (TRNF)	.927	15
Transactional leadership Style (TRNS)	.687	5
Ethical value (EV)	.792	5
Dependent variable		
Project Success (PS)	.817	5

3.7. Ethical Consideration

This research was carried out with the approval of Ethiopian Electric Power and with the agreement of Addis Ababa University School of Commerce. Various staff from various departments of the corporation would be involved in gathering primary data. The researcher has informed the participants of the research's intent and invites them to participate based on their willingness. The questionnaire contains general knowledge about the study's intent. Furthermore, it specifies that respondents are not required to include their names in the questionnaire, ensuring anonymity.

CHAPTER FOUR

RESULT AND DISCUSSION

The main aim of the study is to assess the current leadership attributes of project manager that have role for the success of power generation and transmission construction projects under EEP. In order to achieve this objective, the researcher has gathered data through questionnaires, interviews, and secondary data sources. This chapter provides the output of the research as data presentation, analytic results, and discussion of findings derived from data gathered. The variables that indicate PM leadership traits and project performance are provided in the form of a frequency distribution table mean standard deviation, correlation, and regression analysis, followed by a discussion based on the triangulation of primary and secondary data analysis results.

4.1. Demographic Information of the Respondent

The primary data was collected through a self-administered questionnaire and interview. The interview in this research work was held with two program-managing directors and one executive officer, which is a one to one interview technique. The interviewees are having a background of engineering and they are well experienced (>13 years of experience in EEP) in the area of construction of power transmission and substation practices. The interview was held in their office (EEP headquarter office) and took a total of half hour for each.

Accordingly, 50 questionnaires were distributed to all project managers, site managers, and senior project engineers at EEP, with 42 completed and returned, accounting for 84% of the total number of questionnaire sent out.

As shown in the demographic data table (table 4.1), which shows that the majority of the respondents were predominantly male. Regarding the age category, the highest numbers (71.4%) of respondents fell under the age group of 29-39 years; 19.5% of respondents were in the age range of 40-50 years; 5% were above 50 years old. The age distribution of the respondents revealed that the majority of respondents are in the younger age group. Accordingly, 54.8% and 45.2% of respondents have a BSc and an MA/MSc degree, respectively.

Table 4.1: Respondent's demographic data of the

Classification	Rate of recurrence	%
Sex		
Female	4	9.5
Male	38	90.5
Total	**42**	**100**
Age		
18-28		
29-39	30	71.4
40-50	8	19
50+	4	9.5
Total	**42**	**100**
Level of Education		
Diploma	0	0
BA/BSc	23	54.8
MA/MSc	19	45.2
PhD	-	-
Others	-	-
Total	**42**	**100**
Experience in the Organization		
< 1 year	-	-
1-2 years	-	-
2-5 Years	1	2.4
>5 years	41	97.6
Total	**42**	**100**
No. of projects participation within the last 3 years		
< 3	17	40.5
3-5	15	35.7
5-7	-	-
>7	10	23.8
Total	**42**	**100**
Position in the Organization		
Project managers/ project coordinators	20	47.6
Senior Engineer	10	23.8
Site manager/ Site Coordinator	7	16.7
Others (design managers)	5	11.9
Total	**42**	**100**

Source: Own survey (2021)

The results indicate, almost all respondents are well-experienced (97.6%) workforce and people with a good understanding of the working environment. When we look at the total number of projects that respondents have been involved in over the last three years, 40.5% of respondents have been involved in three projects; 35.7% of respondents have been involved in three to five

projects; and 10 respondents, representing 23.8% of total respondents, have been involved in seven or more projects. This means more than half of the respondents have exposure to working on different projects (> 3 projects) recently. Similarly, as reflected in the above table, 47.6% (20) of the respondents were project managers, 23.8% (10) were project senior engineers, 16.7% (7) were project site mangers and the remaining 11.9% (5) were project design mangers. This result implies that all the respondents have been working on the projects under EEP.

Generally the demographic profile shows that the most of respondents are males, middle age educated, and experienced in the sector. It imply the respondents in a position to provide reliable data that shows the leadership attributes of project management from their experience and from their practice of project management in the organization.

4.2. Descriptive Statistics for Study Variables

The respondents were requested to express their opinions on these parts of leadership traits of project managers and project success in EEP. A five-point Likert scale was used to evaluate the responses the following statements were provided to determine their level of agreement with the statements for each dependent and independent variable. A summary of descriptive analysis for each variable is presented as follows.

4.2.1. Personal Leadership Trait

There were six main features of personal traits that were assessed. As shown in the following table (table 4.2), the respondent's opinion about personal traits of PMs an EEP is somewhere between neutral and agreement. The result shows that the project team has easy access to the project managers in EEP with the highest mean score, relatively. Almost all of the respondents agreed or strongly agree with the statement that the project team has easy access to the project managers in EEP.

Table 4.2: Descriptive Statistics for personal leadership trait

Descriptive Statistics		
	Mean	S.D.
The project managers in EEP are **farsighted**	3.21	.72
The project team has **easy access** to the project managers in EEP.	**4.09**	**.53**
The project managers in EEP have **focus on results**.	3.59	.80
The project managers in EEP have **enthusiasm**.	3.45	.67
The project managers in EEP have **persuasiveness**	3.31	.75
The project managers in EEP have **social behavior**, social adaptability and extrovert nature.	3.55	.67
Overall personal trait	**3.54**	**0.45**

Regarding the remaining personal leadership traits of PMs, the majority of respondents responded as neutral. From the findings of the study, the personal trait factor that has the least mean score is the farsightedness of the project manager.

The results from Muller, Geraldi, and Turner (2012) and Kaleb, (2017) supported that personal traits like those that result in orientation/focus and persuasiveness of the PM were found to have a significant association with project success. This was also supported by the response from the interview. On the other the study conducted by Tsion, (2019) found out that the PM's farsightedness and the project team having easy access to the PM have very high importance for project success. In the remaining items in table 4.2 above, most respondents felt neutral about the statements related to personal leadership traits of PMs. From the findings of the study, the personal trait factor that has the least mean score is the farsightedness of the project manager. This result (SD<1) indicates that the participants in the study has similar insight.

The results from Muller, Geraldi, and Turner (2012) and Kaleb,(2017) supported that personal traits like those that result orientation/focus and persuasiveness of the PM were found to have a significant association with project success, this also supported by the response from the interview. On the other hand, the study conducted by Tsion, (2019) concluded that the first and the second components described in the above table are more critical for the successful completion of projects. But the result indicated PMs in EEP doesn't have adequate personal trait such as farsightedness and persuasiveness.

4.2.2. Technical Leadership Skill

For technical skills, six key aspects were assessed as shown in the below table.

Table 4.3: Descriptive Statistics for technical leadership skill

Descriptive Statistics		
	Mean	S.D.
The project managers in EEP have the **budgeting skills**.	**3.52**	**.80**
The project managers in EEP have **planning and scheduling skills**.	3.33	.82
The project managers in EEP have **quality management skill**.	3.19	.77
The project managers in EEP have **risk management skill**.	2.93	.84
The project managers in EEP have **stakeholder management skill.**	3.31	.90
The project managers in EEP have **people management skill**.	3.29	.83
Overall technical skill	**3.26**	**0.61**

The overall technical leadership skill of PM, as a component of leadership attributes practice, is slightly above neutral, as shown in the above table (table 4.3). It implies respondents don't feel confident that PM in EEP has the overall technical skills. The study also found that the respondents agreed or strongly agreed with the statement 'The project managers in EEP have the budgeting skills'. PM's in EEP also have planning and scheduling skills and stakeholder management skills, according to most respondents. According to a recent study, Project schedule management was the technical leadership skills that were rated higher by successful PMs (Kaleb, 2017; Tsion, 2019).

PM's people management skills and quality management skills are fourth and fifth ranked factors. The only factor with a below average score is the risk management skill of the PM. Therefore, it may be concluded that there is a gap in developing and practicing risk management skills by PM, as it is evidenced by the respondents' perception

4.2.3. Soft Leadership Skill

For soft skills, six key aspects were assessed as shown in the below table.

Table 4.4: Descriptive Statistics for soft leadership skill

Descriptive Statistics		
	Mean	Std. Deviation
The project managers in EEP have **communication skills**.	**3.71**	**.74**
The project managers in EEP have **interpersonal skills.**	3.67	.79
The project managers in EEP have **coordination skills.**	3.45	.89
The project managers in EEP have **team building and delegation skills.**	2.93	.87
The project managers in EEP have **problem finding, analyzing and solving skills.**	3.09	.90
The project managers in EEP have **time management (Temporal) skills.**	3.02	.84
Overall soft skill	**3.31**	**0.62**

Source: own survey, 2021

The overall soft leadership skill of the PM, as a component of leadership attributes practice, scored 3.31. The study found out that the PM's communication and interpersonal skills have the highest mean score. It is also supported by the response from the interview. It implies most of the respondents (47%) agree or strongly agree that PMs in EEP have communication skills. The third highest mean score for soft skills is PM's coordination skill. PMs' problem-solving skills and time management skills are ranked fourth and fifth, respectively, and they are close to the average mean score. The item with the least mean score is slightly below the average mean, which is team building and delegation skill. Therefore, it implies that PMs in EEP may lack team building and delegation skills. However, the study conducted by Yared (2018) found that soft skills, especially team building skills, have influenced the most on project deliverability.

4.2.4. Emotional Intelligence (EI)

For emotional intelligence, four key aspects were assessed as shown in the below table.

Table 4.5: Descriptive Statistics for emotional intelligence

Descriptive Statistics		
	Mean	Std. Deviation
The project managers in EEP have **self-awareness**.	3.62	.79
The project managers in EEP have **self-management.**	**3.64**	**.76**
The project managers in EEP have **social awareness** of the working environment.	3.59	.70
The project managers in EEP have a **relationship management** approach with various stakeholders.	3.33	.90
Overall Emotional intelligence	**3.55**	**0.61**

Source: own survey, 2021

The above table shows that the overall emotional intelligence (EI) of PM scored is 3.55, which is above the average. When we see the individual items of EI, the highest mean scores are PM's self-management and self-awareness. It implies most of the respondents (61.9%) agree or strongly agree that PMs in EEP have self-awareness. Self-management and self-awareness are followed by social awareness of the PM. A relationship management of PMs is the item with the lowest mean score. Similarly, studies indicated that self-awareness and self-management were the most important aspects of emotional intelligence that influenced project success, followed by relationship management and social awareness (Trivellasa and Drimoussisb 2013).

4.2.5. Leadership Style

There were two main items that were assessed under leadership style, namely transformational and transactional leadership style, which have fifteen and five sub items under each category respectively.

Table 4.6: Descriptive Statistics for transactional leadership style

Descriptive Statistics			
Main Categories		Mean	Std. Deviation
Idealized influence (attribute)	The project managers in EEP do beyond their self-interest for the good of the project team.	3.05	.91
	The project managers in EEP have a way to instill pride and bring respect among project teams.	3.05	.79
	The project managers in EEP have extraordinary talent of competence.	2.67	.95
Idealized influence (behavior)	The project managers in EEP have a commitment to beliefs.	3.24	.90
	The project managers in EEP take a stand on difficult issues.	3.14	.90
	The project managers in EEP talk and display conviction about their values & beliefs to project teams.	3.09	.82
Inspirational Motivation	The project managers in EEP talks envisioned exciting new possibilities.	2.76	.82
	The project managers in EEP talk enthusiastically about what need to be accompanied.	3.09	1.00
	The project managers in EEP talk optimistically and expressed their confidence that goals will be achieved.	3.19	.92
Intellectual Stimulation	The project managers in EEP re-examining the appropriateness of critical project assumptions.	3.09	.93
	The project managers in EEP see differing perspectives when solving problems.	3.21	.92
	The project managers in EEP made team members to look at issues or problems from many different angels.	3.33	.87
	The project managers in EEP suggest new ways of looking at how to complete project activities	**3.40**	.88
Individual Consideration	EEP project managers view project team members as individuals with distinct needs, abilities, and aspirations.	3.21	.87
	The project managers in EEP spent time teaching & coaching project team members to develop their skills and strengths	2.67	.93
Overall transformational leadership style			

Source: own survey, 2021

As shown in the table above, the overall transformational leadership style (TRSM) practice of PM fell on average, with a score of 3.08.When we look at the items, "The project managers in EEP suggest new ways of looking at how to complete project activities", with a 40% level of agreement with the statement. The item with the least mean score is "The project managers in EEP spent time teaching & coaching project team members to develop their skills and strengths" a relationship management of PMs with a mean score below average.

Therefore, it implies that PMs in EEP may not focus on project team skill development, rather the project itself. The interviewee also confirm that there is no system that work or practices to train project team for improve the success rate of projects or develop well equipped project managers.

The respondent also felt neutral and disagree with the statement “The project managers in EEP have extraordinary talent of competence and they talks envisioned exciting new possibilities.” Generally, there is a gap in PM’s idealized influence (attribute and behavior), inspirational motivation, intellectual stimulation and individual consideration.

Table 4.7: Descriptive Statistics for transactional leadership style

Descriptive Statistics			
Major categories		Mean	S.D
Contingent Reward	The project managers in EEP tell project team members what to do to be rewarded for effort	2.40	.91
	The project managers in EEP negotiate with team members on what each team member can expect to receive	2.64	.91
	EEP's project managers ensure that each project team receives rewards for meeting goals	2.05	.58
Management by exception	The project managers in EEP focus on failures and dealing with mistakes, complaints and deviations from standards	**2.88**	.92
	The project managers in EEP search and keep track of mistakes before commenting on performance	2.79	.81
Overall transactional leadership style		**2.55**	**0.62**

Source: own survey, 2021

As the above table depicts, the overall transactional leadership style (TRNS) practice of PM falls below average, score mean and standard deviation of 2.55 and .62 respectively. When we look at

the items, the highest score is "The project managers in EEP focus on failures and dealing with mistakes, complaints and deviations from standards" with a mean value of 2.88. The item contingent reward and management by exception both have below-average means. It means that while most EEP PMs are not transactional leaders, when it comes to item management by exception, the mean is closer to average rather than disagree.

This result is supported with a study by Lidiya (2019). In the case of EEP, the researcher assessed factors affecting leadership effectiveness from the perspective of employees. According to the findings, the majority (53.6%) of employees are not motivated because motivation does not exist as much as employees expect, and employee motivation is the most important aspect that impacts a leader's effectiveness, as indicated by the majority's (30.2%) response.

As interview respondent illustrated, there is no official rewarding system and most project managers uses mixed leadership style. On the other hand, employee with good performance has been nominated for Factory acceptance test and training informally. Currently EEP has announced a rule that state employee's key performance indicator will be used for the purpose of promotion and for other benefit such as bones and annual increment.

4.2.6. Ethical Value

There were five key aspects that were assessed under leadership ethical value, namely moral and ethical decision, responsibility, fairness, respect and honesty and integrity of the PM.

As the below table illustrates the overall ethical value (EV) practice of PM score mean of 3.32, it implies most respondents felt near neutral toward ethical leadership practice in EEP. The item 'The project manager in EEP has respect towards various stakeholders' got agreement from most respondent. PM's taking full responsibility and fairness is second and third ranked factors. The fourth one is PM's honesty and integrity; this indicates that most of respondents responded agree or is neutral to the statement that the project managers in EEP have honesty and integrity. Furthermore, the respondents felt neutral toward the statement "The project managers in EEP consider the moral and ethical consequences of decisions".

Table 4.8: Descriptive Statistics for Ethical value

Descriptive Statistics		
	Mean	S.D
The project managers in EEP consider the **moral and ethical consequences of decisions**	3.09	.93
The project managers in EEP take full **responsibility**	3.36	.93
The project managers in EEP are **fair** to their subordinates	3.33	.82
The project manager in EEP have **respect** towards various stakeholders	**3.57**	**.77**
The project managers in EEP have **honesty and integrity**	3.24	.76
Overall Ethical value	**3.32**	**.62**

Source: own survey, 2021

As the above table illustrates the overall ethical value (EV) practice of PM score mean of 3.32, it implies most respondents felt near neutral toward ethical leadership practice in EEP. The item 'The project manager in EEP has respect towards various stakeholders' got agreement from most respondent. PM's taking full responsibility and fairness are second and third ranked factors. The fourth one is PM's honesty and integrity, this imply that most of respondents respond either agree or were neutral for the item that the project managers in EEP have honesty and integrity. Furthermore, the respondents felt neutral toward the statement "The project managers in EEP consider the moral and ethical consequences of decisions".

Interview response also support the result obtained in the above table 4.7, interviewees states that there is policy and strategy along with directorate office that handle issues related with unethical behavior, the policy and strategy is not clear and specific for project managers and practice is far from the policy due to evidence gap, lack of constant follow up and monitoring, lack of awareness and, unclear delegation of power (DoP)

4.2.7. Project Success

Under project success, five key aspects were evaluated: project objectives, completion within budget, schedule, and quality; and stakeholder satisfaction.

Table 4.9: Descriptive Statistics for Project Success

Descriptive Statistics		
	Mean	S.D.
The project in EEP **meets its objectives**	**3.33**	1.00
The projects in EEP were completed within **budget**	2.38	.88
The project was completed within **schedule**	1.88	.50
Project **stakeholders were satisfied** with project in EEP	2.83	.91
The overall **quality** of the project outcome was high	3.17	.93
Overall project success	**2.72**	**.66**

Source: own survey, 2021

As the above table illustrates the overall successful completion of projects at EPP is below average. The item 'The project in EEP meets its objectives' got the highest score with a mean value of 3.33 but it is slightly above neutral. The second highest mean score for project success is 'The overall quality of the project outcome was high' with a mean value of 3.17. Besides, the respondent felt neutral about the project success that satisfies the stakeholders and almost all respondents disagree with the statement "the project in EEP was completed within budget". Most importantly the study shows that the project in EEP was not completed within schedule.

Data from secondary data sources show that almost all projects which currently undertaken by EEP has been behind the schedule and some of the projects have cost overrun. Besides, Interviewees' responses also affirm that projects in EEP were not completed under predetermined constraints and fulfilled the stakeholder expectation. The respondent stated that schedule, budget and quality are major criteria to identify the project successful. However, the quality issue cannot be measured on one period since the plants are constructed for the longer period of time use. EEP does not have Post project evaluation in order to measure this quality constraint and to evaluate the project manger's performance as well.

4.3. Correlation Analysis

The association between PM leadership traits and project success was shown and addressed in the next section. The section covered the direction and magnitude of the relationship between the overall leadership attributes of PM and project success as well as the components of leadership

attributes of PM and project success. Furthermore, the influence of leadership attributes of the PM and their component on project success is examined in the following section.

A perfect positive relationship is defined by a correlation coefficient of +/-1, in which every change of +/-1 in one variable is linked with a change of +/-1 in the other variable. A correlation of 0 indicates that no correlation. As a result, Pearson's Product Moment Correlation is used. The link between the variables under research is examined using coefficients and linear regression, and the strength of the correlation was evaluated using Evans' (1996) recommendation in the following pattern:-

0.00 - 0.19 “Very weak”
0.20 - 0.39 “Weak”
0.40 - 0.59 “Moderate”
0.60 - 0.79 “Strong”
0.80 - 1.00 “Very strong”

4.3.1. Pearson Correlation Analysis

4.3.1.1. The relationship between dependent and independent variables

Table 4.10. The correlation between PM’s leadership attributes and project success

Correlations			
		PS	Overall_Leadership_Att
PS	Pearson Correlation	1	.812**
	Sig. (2-tailed)		.000
	N	42	42
Overall_Leadership_Att	Pearson Correlation	.812**	1
	Sig. (2-tailed)	.000	
	N	42	42
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: own survey, 2021

As the above table illustrates, there is positive and significant association between the overall leadership attributes of PM and project success in EEP (r= .812, p<.001).

4.3.1.2 Relationship Between components of PM's Leadership attributes and project success

The researcher also ran a Pearson correlation analysis to see the relationship of individual PM's Leadership attributes (seven components of TM) with project success in order to investigate the relationship of PM's Leadership attributes and project success in a more detailed manner, and presented.

According to the below table, the correlation coefficient is very strong and represents a statistically significant positive relationship between transformational leadership style (TRNF) and project success (r =.858, p.001), followed by technical skill (r =.758, p.001), ethical value (r =.771, p.001), and soft skill (r =.679, p.001).Emotional intelligence (r = .619, p < .001) and personal trait (r = .599, p < .001) also have a strong and statistically significant positive relationship with project success in EEP. A study by Muhammed & Sajid (2021) based on data collected from 170 Pakistani PMs backs up this conclusion. Extraversion (social behavior), openness (ease of access), and agreeableness were revealed to be direct positive predictors of project success in the study.

As per the below table, the correlation coefficient is very weak and represents a statistically positive relationship between transactional leadership style (TRNS) and project success (r = .173, p < .001). Moreover, the above table indicates that independent variables are statically significant. This suggests, except for transactional leadership style, there is a significant association between the independent variables (transformational leadership style, technical and soft skill, ethical value, emotional intelligence, and personal trait) and project success.

Table 4.11: The correlation between components of PM's leadership attributes and project success

Correlations									
		PT	TS	SS	EI	TRNF	TRNS	EV	PS
PT	Pearson Correlation	1	.737**	.618**	.588**	.749**	.189	.606**	.599**
	Sig. (2-tailed)		.000	.000	.000	.000	.232	.000	.000
	N	42	42	42	42	42	42	42	42
TS	Pearson Correlation	.737**	1	.809**	.723**	.845**	.151	.622**	.758**
	Sig. (2-tailed)	.000		.000	.000	.000	.341	.000	.000
	N	42	42	42	42	42	42	42	42
SS	Pearson Correlation	.618**	.809**	1	.812**	.809**	.211	.659**	.697**
	Sig. (2-tailed)	.000	.000		.000	.000	.181	.000	.000
	N	42	42	42	42	42	42	42	42
EI	Pearson Correlation	.588**	.723**	.812**	1	.718**	.178	.607**	.619**
	Sig. (2-tailed)	.000	.000	.000		.000	.260	.000	.000
	N	42	42	42	42	42	42	42	42
TRNF	Pearson Correlation	.749**	.845**	.809**	.718**	1	.294	.750**	.858**
	Sig. (2-tailed)	.000	.000	.000	.000		.059	.000	.000
	N	42	42	42	42	42	42	42	42
TRNS	Pearson Correlation	.189	.151	.211	.178	.294	1	.250	.173
	Sig. (2-tailed)	.232	.341	.181	.260	.059		.111	.272
	N	42	42	42	42	42	42	42	42
EV	Pearson Correlation	.606**	.622**	.659**	.607**	.750**	.250	1	.771**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.111		.000
	N	42	42	42	42	42	42	42	42
PS	Pearson Correlation	.599**	.758**	.697**	.619**	.858**	.173	.771**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.272	.000	
	N	42	42	42	42	42	42	42	42
**. Correlation is significant at the 0.01 level (2-tailed).									

Source: own survey, 2021

4.4. Regression Analysis

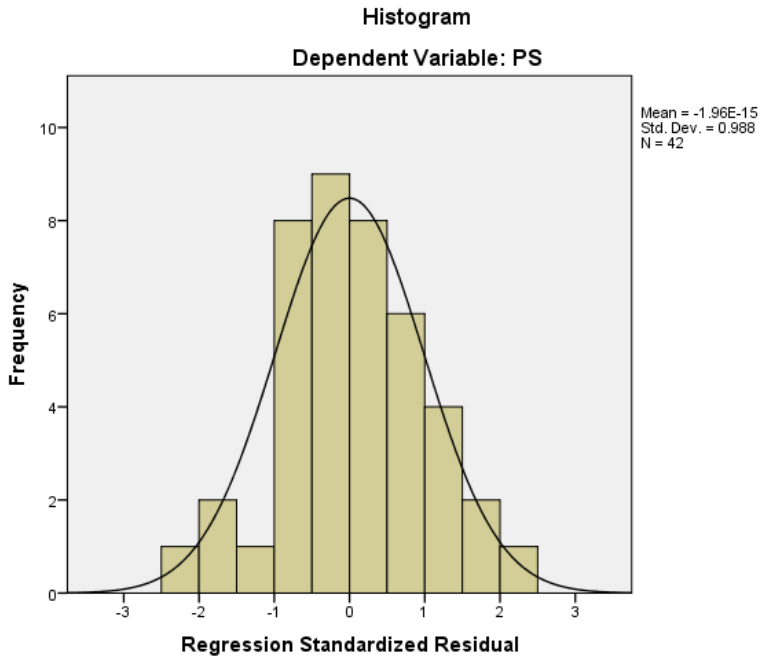
4.4.1. Diagnosis Tests

According to Field (2009), in order to execute a basic linear regression, it is necessary to examine crucial assumptions, which is useful in drawing conclusions about the population under investigation. The normality of both predictor and predicted variables, as well as the linearity of the said relationship, were examined in this respect. Besides, Key assumptions should be satisfied while doing multiple regression analysis utilizing regression equation, as stated by Saunders, et al. (2009). As a result, in order to run the regression analysis, When dealing with many independent variables, the researchers must ensure that the variables are linearly related, that the data is normally distributed, that the variances are homogeneous, and that there is no collinearity between the variables (to determine the separate effect of individual leadership attributes). The results of normality, linearity, multicollinearity and homogeneity of variances test presented as follows.

I. Normality

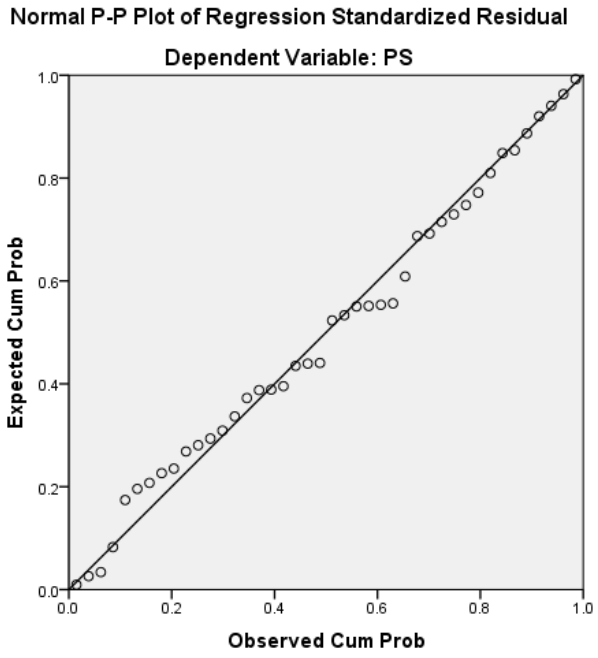
As a result, among the several approaches to verify the normality assumptions for basic linear regression analysis, inspecting a distribution using a histogram and a P–P plot (probability–probability plot) is recommended. As a result, in order to verify the validity of these assumptions, the researcher uses a histogram and a P-P plot to check for normality.

Figure 4.1: Histograms



As Garson (2012) and Field (2009) pointed out, the form of a symmetric bell-shaped curve as normal distribution. Accordingly, as can be seen in the figure 4.1, the histogram appears to have normal distribution or bell-shaped curve and the distribution is normal. Also, the curve is symmetrical and skewed. As a result, it can conclude that it is a good model for the data.

Figure 4.2: Normal distribution error

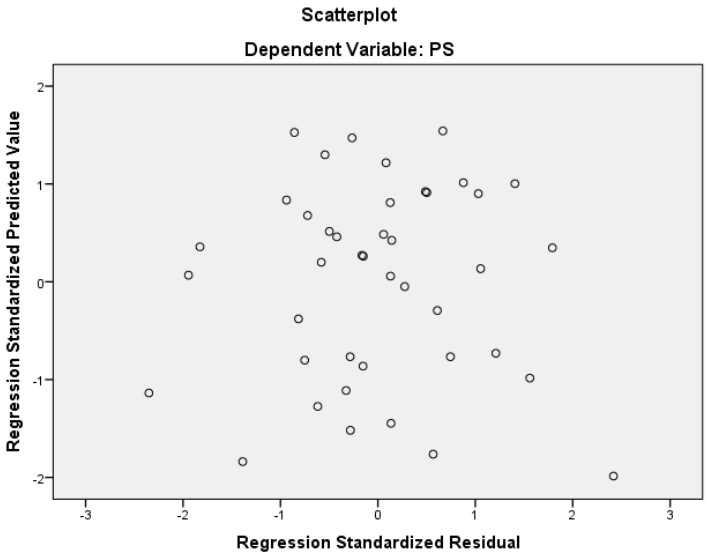


Deviations from normality are also visible in the normal probability plot. The dots in this figure reflect the observed residuals, whereas the straight line indicates a normal distribution. As a result, with a data set with precisely normal distribution, all points will lie on the line (Field, 2009). Similarly, as seen in the preceding figure (figure 4.2), the dots are closely aligned to the straight-line, indicating a minor or no deviation from normality. As a result, the basic linear regression assumption has been fulfilled, and we may reasonably infer that the model is correct and can be generalized to the entire population.

II. Linearity

As Garson (2012) pointed out, a simple study of scatterplots is a standard way for detecting whether or not a connection is nonlinear. As a result, the researcher uses a basic scatterplot to examine if the variables have a linear connection.

Figure 4.3: Linearity of PM's leadership attributes and project success



The assumption of linearity implies that the mean values of the outcome variable for each increment of the predictor lie along a straight line (Field 2009). However, the simulated relationship is deemed to be roughly linear. As can be seen in the below figure (figure 4.3), the dots are dispersed in the shape of a straight line. This could be due to several reasons such as the impact of lower level of sample size. The dots also have an upward trend (positive slope), indicating that there is a positive linear link between the two key variables (leadership attributes and project success), as indicated by the correlation matrix

III. Multi-collinearity

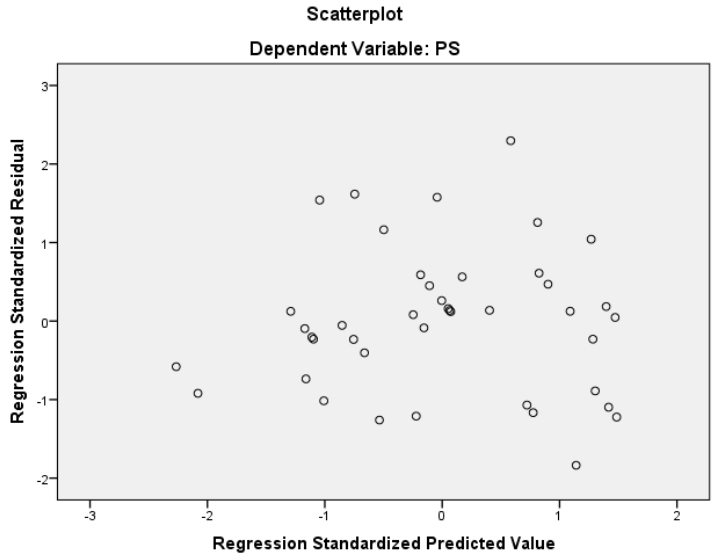
As the degree of correlation between the independent variables grows in multiple regression analysis, the regression results become less credible. As a result, if there is a significant level of correlation between independent variables, we have a situation known, as Multi-collinearity is a problem that has to be addressed (Kothari, 2004). This may be accomplished by examining the Pearson correlation coefficient between predictor variables. There is no significant connection between predictor variables if the Pearson correlation coefficient (r) value is less than 0.9; hence, there is no multi-collinearity problem (Field, 2006).

All of the Pearson correlation coefficients are provided in table 4.11 below. As a result, the variables are not overlapping and there is no collinearity impact, which may limit the model's capacity to forecast.

IV. Homoscedasticity

Homoscedasticity is used to determine whether the relationship under investigation is the same across the entire range of the dependent variable, according to Garson (2012), and lack of homoscedasticity is indicated by higher errors (residuals) for some portions of the range, as shown on the scatterplot. If the assumption of homoscedasticity is met, the graphs of *ZRESID and *ZPRED should look like a random arrangement of dots around zero, as shown by Field (2009). Similarly, as seen in figure 4.4 below, the points are dispersed randomly and equally throughout the plot, with no obvious outliers on this cloud of dots centered on zero. Thus, it can conclude that the random errors and homoscedasticity assumption has been met.

Figure 4.4: Homoscedasticity



4.4.2. Linear regression Analysis

Table 4.12: Model summery, PM's leadership attributes as predictor of Project success in EEP

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.812[a]	.659	.650	.38844
a. Predictors: (Constant), Overall_Leadership_Att				
b. Dependent Variable: PS				

From the above table 4.12, it can be detected that R is .812 and R square is .659. This implies that about 65.9% of the variance in project success (dependent variable) can be explained by PM's leadership attributes (independent variable). Other variables not included in this study account for the remaining 44.1 percent of the variance.

As per the interviewee, PM's leadership has great role for the success of the project in EEP. However, the practice and the structure of the organization not allowed full delegation for the project managers to exercise. There are other internal and external stakeholders that have impact the project success such as Procurement Executive office and Engineering executive office (internal consultant) and other government administrative office involved specially in right of way issues.

Similarly, The study conducted in Kenya on the industry show that leadership components such as leadership skills, leadership experience, leadership quality, and leadership styles will result in a 69.5 percent improvement in project performance (Momanyi N. Theophanus, 2020).

Table 4.13: ANOVA, PM's leadership attributes as predictor of Project success in EEP

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11.649	1	11.649	77.204	.000[b]
	Residual	6.036	40	.151		
	Total	17.685	41			
a. Dependent Variable: PS						
b. Predictors: (Constant), Overall_Leadership_Att						

Source: own survey (2021)

The F test result in this above ANOVA table is 77.204, with a significance of less than.001, indicating that the odds of these occurrences occurring by random are less than .001. As a result, the PM's leadership attributes influence a significant portion of project success, implying that the independent variable (PM's leadership attributes) statistically and significantly predicts the dependent variable (project success in EEP), and thus the overall regression model is significant and is a good fit of the data, $F(1, 40) = 77.204$, $p < .001$, $R2 = .659$.

Furthermore, the reduced standard error of the estimate and larger F value demonstrated that the dependency between the two variables, i.e. PM leadership traits and project performance, is strong and substantial. As a result, it can be inferred that the PM's leadership traits have a considerable impact on project success, where, $p < .001$.

Table 4.14: Model summery, PM's leadership attributes as predictor of Project success in EEP

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.957	.423		-2.265	.029
	Overall_Leadership_Att	1.138	.130	.812	8.787	.000
a. Dependent Variable: PS						

Source: own survey

Based on the above coefficient table (table 4.14), Beta-value of .812 indicates that there is a direct relationship exists between PM's leadership attributes and project success. Moreover, the B value (1.138) in the unstandardized coefficient column, represent that, considering all other factors constant at zero, for every one unit increase on leadership attributes (LA), we expect 1.138 unit increase in project success in EEP. This implies that, as a project manager plays an effective leadership role at the company, successful projects increase significantly. Thus the regression equation, in this condition, will be:-

$$PS = -0.995 + 1.338LA.$$

This implies that, as leadership attributes is in place at the organization, project success rate in EEP increases significantly. According to the above discussions in describing the influence of leadership attributes on project success, project success is influenced by several factors other than the role of the project manager; and this is supported by the regression result, which demonstrates that other factors account for 44.1 percent of the variance in project performance., which may include other government administration offices, other executive offices under CEO such as top management support, contractors, internal consultant and procurement executive office's performance also has great impact on the project success as per the interview conducted.

4.4.2. Multiple Linear Regression Analysis

The standardized coefficients are utilized to measure the relative significance of the key predictors. The result shows that the best predictor is Transformational leadership style which has the highest standardized coefficient (.712) and the lowest significance (.001). It is roughly higher than the

other factors, it could be affected unbalanced number of question forwarded to the respondent (52% of the question is regarding transformational leadership style) since the researcher adapt MLQ standard questionnaire. But, his finding is in line with Alem (2019), who discovered that a project's transformational leadership style has a favorable and significant impact on the project's success.

Table 4.15: Summary of regression results for leadership attributes

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.253	.471		.537	.594
	PT	.127	.179	.189	1.540	.133
	TS	.249	.182	.231	1.368	.180
	SS	.215	.178	.105	.630	.533
	EI	.182	.144	.033	.246	.807
	TRSF	.712	.195	.684	3.646	.001
	TRNS	-.098	.096	-.083	-1.019	.315
	EV	.356	.125	.338	2.849	.007
a. Dependent Variable: PS						

Source; own survey

Followed by ethical value which has a standardized coefficient of .356 and significance of p= 0.007 it suggests that in EEP both transformational leadership style and ethical value have a positive and significant impact on project success. However, results presented in the study showed that transactional leadership style (B= -0.098) has a negative and insignificant effect on successful completion of projects. The regression equation is:-

PS = 0.253+.127(PT) +.249(TS) +.215(SS) +.182(EI) +.712(TRNF)-.098(TRNS) +.356(EV).

From this influence exerted on PM' LA, transformational leadership style and ethical value have statistically unique contribution for the outcome. Therefore, it can be induced from the above result that, transformational project leader with idealized influence (behavior & attributes), inspirational motivation, intellectual stimulation, and individual consideration highly influence the success rate of project in the organization significantly.

CHAPTER FIVE

SUMMERY OF FINDING, CONCLUSION AND RECOMMENDATIONS

The findings of the study on the PM's leadership attributes for project success in the case of Ethiopian Electric Power are summarized in this section. It also includes conclusions and recommendations based on the findings.

5.1 Summary of Findings

Six PM's leadership attributes, including personal trait, technical and soft skill, emotional intelligence, leadership style, and ethical value, were found to be crucial for project performance at EEP, according to the study.

The findings in the study revealed that most of senior project staffs at the organization opinion is close to agree regarding PM's emotional intelligence (Mean=3.55). This result in the study showed that most employees agree that PMs have self-awareness, self-management, social awareness and relationship management. In addition, the respondents' opinions on the personal leadership quality at EPP were mainly in agreement (Mean=3.54). The majority of employees feel that PMs may be easily accessed, PM's result orientation, social behavior, enthusiasm and persuasiveness but they felt neutral about the PM's farsightedness according to the study's findings. Similarly, the study reviled that project senior staff's opinion is close mostly to agreement and neutral for PM's technical skill (3.26), soft skill (3.31), ethical value (3.32) and transformational leadership style (3.08). On the other hand, respondents were disagreed with the statement PM's have transactional leadership style. Similarly, this result reflects senior project staff has agreed (44%) that PMs have overall leadership attributes at EPP.

The study also conducted correlation analysis to learn the relationship between the independent variables (personal trait, technical skill, soft skill, emotional intelligence, leadership style and ethical value) and project success at EPP. Its results revealed that all the independent variables have a positive, strong and significant correlation with project success at EPP with the exception of transactional leadership style. In addition, out of the independent variables, transformational leadership style (rho=0.858) and ethical value (rho=0.771) have higher positive values in correlation with the success of projects.

Also, the study undertakes regression analysis to uncover the influence of each components of PM's leadership attributes on the success of projects. The linear regression model suggests that 65% of the variance in project success is due to the variance in leadership attributes. Furthermore, a positive relationship exists between each leadership attributes and project success. Even if there are factors that are beyond the project manager's role, the interview respondents have confirmed that leadership attributes have a great role in the success of the project.

As per the regression analysis's result, transformational leadership has the highest positive (B=0.712) and significant effect on successful completion of projects. Ethical value also have a positive (B=0.356) and significant effect on successful completion of projects. Similarly, technical skill (B=.249), soft skill (B=0.215), emotional intelligence (B=0.182) and personal traits (B=0.127). However, results presented in the study showed that transactional leadership style (B=-0.098) has a negative and insignificant effect on successful completion of projects. This indicates those PMs who adopt a transformational leadership style are more likely to have a positive impact on the success of the project in EEP (B = 0.712). Moreover, PMs with a higher degree of ethical leadership value are more likely to lead to success (B=0.356). In addition, temporal skills and communication skills were the major soft skill leadership attributes that were associated with the successful completion of projects in EEP. Similarly, schedule, cost, and quality management were deemed to be the most important technical leadership skills that PMs should possess in order to be better equipped to complete the project successfully.

According to the regression results, there was a negative (Beta =-0.098) but insignificant relationship between transactional and project success. This also means that a transactional leadership style is not that effective for the success of the project.

5.2. Conclusion

The main aim of the study was to assess the current leadership attributes of project managers that have plays significant role for the success of power generation and transmission construction projects under EEP.

According to the study's finding, the PMs in EEP have all the leadership attributes included in this study except for transactional leadership style. From the finding, it can be seen that the seven leadership attribute variables of the study predict the successful completion of the project by 65%. From this result, it can be concluded that there is a strong relationship between leadership attributes

and project success. This infers that EEP should give more emphasis to empowering the PMs' leadership attributes in order to have a higher rate of project success.

Of the seven variables under leadership attributes, transformational leadership style has the highest correlation with project success. This implies that project managers who apply the transformational leadership style have a higher probability of completing the project within the specified constraints. Therefore, there is a need for EEP PMs to adopt a transformational leadership style as a way of enhancing project success rate.

5.3 Recommendation

As the findings of the study point out, transformational leadership, style and ethical leadership value are the most determinants of leadership attributes that have a positive impact on project success. Any project manager should be equipped with these leadership attributes to ensure project success. In addition, the project-working environment should be tuned with leadership style, ethical value and leadership qualities so that rules and regulations stated in the manuals can be bridged with practice in order to maximize the success of the project.

It is recommended that establishing a system to evaluate and compare such attributes could provide a massive contribution to the success of the project. Individuals should be recruited, selected, and assigned to projects based on their leadership qualities, not only their expertise or recommendations, in order to produce better results. Thus, it is suggested that criteria and job description should incorporate these necessary skills, behaviors, personal traits and ethical values in addition to education level and work experience.

Furthermore, training and coaching platforms should be arranged, so that inexperienced PMs can be better equipped to deal with the complexities of projects. Since the project environment is dynamic, the project managers need to be proactive, need to have problem solving skills, communication skills, resource management skills and need to motivate their subordinates for the success of the project. Training in areas of this and in project management in general can make a vital contribution towards improving leadership attributes required of the PM.

A lesson learned and best practice Documents with post should be organized and distributed to all PMs so that they can better deal with problems that have arisen in the past. In addition, the study recommends that EEP should conduct post project evaluation to gauge the level of stakeholders' satisfaction and the impact of the project against the intended goal.

5.4 Suggested Further Research

The main aim of this research was on the PM's leadership attributes that have impact on project successful completion in Ethiopian Electric Power (EPP). The study focused on success of projects at EEP from the project management office's management members (above D5 level) perspective, where the respondents were targeted from one organization only. It is also suggested that this subject area can be explored from the perspective of beneficiary and external consultants and donors with the project stakeholders constituting the sample population.

Reference

A Guide to the Project Management Body of Knowledge (PMBOK Guide). Newtown Square, Pa.: Project Management Institute, Inc., 2004. Print

Adams, S., Klobodu, E. K. M., & Opoku, E. E. O. (2016). Energy consumption, political regime and economic growth in sub-Saharan Africa. Energy Policy, 96, 36-44.

Assaf, S. and Al-Heiji, K. (2006). Causes of Delays in Large

Bass, B. M. (1990). Bass & Stogdill's handbook of leadership: Theory, research, and managerial applications (3rd ed.). New York: Free Press.

Alem S.(2019) The Effect of Project Manager's Leadership Style and Teamwork on Project Performance: the case of HELVETAS Swiss Intercooperation Ethiopia

Belout, A., & Gauvreau, C. (2004). Factors affecting project success: The impact of human resource management. International Journal of Project Management, 22(1), 1-12.

Clarke, N. (2010). Emotional Intelligence and Its Relationship to Transformational Leadership and Key Project Manager Competences. Project Management Journal, 41, 2, 5

Creswell, J.W. 2003. Research Design: Qualitative, quantitative and mixed methods approaches, CA: Sage

D. Goleman, and R. Boyatzis, The New Leaders, Boston: Harvard Business School Press, 2002.

D.H. Walker, B. Lloyd-Walker, Understanding early contractor involvement (ECI) procurement forms, in: Twenty-Eighth ARCOM Annual Conference, Edinburgh, 2011, pp. 5-7.

Davis, A., Hobday, M., 1967. The Business of Projects Managing Innovation in Complex Products and Systems. Cambridge University Press, Cambridge.

De Mascia, S. (2012). The Psychology of Project Management. PM World Today, 14(3), 1-5.

Dulewicz V, & Higgs MJ. (2003) Design of a new instrument to assess leadership dimensions and styles. Henley Working Paper Series HWP 0311. Henley-on-Thames, UK: Henley Management College.

Eberhard, A., Gratwick, K., Morella, E., & Antmann, P. (2016). Independent power projects in sub-Saharan Africa: Lessons from five key countries. World Bank Publications

Esso, L. J., & Keho, Y. (2016). Energy consumption, economic growth and carbon emissions: Cointegration and causality evidence from selected African countries. Energy, Construction Projects. International Journal of Project Management, Volume 24, 349 - 357

Field, A., 2009, Discovering statistics using SPSS: Third edition. London: SAGE Publications Ltd .

Garson, D. (2012). Testing statistical assumptions. NewYork: Statistical Associates Publishing.

Goleman D, Boyatzis RE., & McKee A. (2002). The new leaders. Cambridge (MA): Harvard Business School Press.

Ika L, Diallo A, Thuillier D. Critical success factors for World Bank projects: An empirical investigation. Int J Proj Manag 2012;30(1):105- 116.

J. Manag. Dev. (2008) Boyatzis, R.E. Competencies in the twenty-first century, 27, 5–12.

James T., (2018).The Effect of Project Manager's Leadership Style on Performance of Water Projects in Kenya,

Kerzner, H. (2013). Project Management: A Systems Approach to Planning, Scheduling and Controlling.

Kirton, M. (1976). Adaptors and innovators - a description and measure. The Journal of Applied Psychology, 61(5), 622-629.

Kulworawanichpong T. & Mwambeleko J. (2015) Design and costing of a stand-alone solar photovoltaic system for a Tanzanian rural household. Sustainable Energy Technologies and Assessments, 12, 53-59

Lydia B. (2019) assessment of factors affecting leadership effectiveness from employees' perspective: a case of Ethiopian Electric Power (EEP)

Matthew Eja AND Manu Ramegowda, (2019) government project failure in developing countries: a review with particular reference to Nigeria

Mayer, J., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey and D.J. Sluyter (Eds.), Educational development and emotional intelligence: Educational implications. New York: Basic Books

Mentis, D., Welsch, M., Fuso Nerini, F., Broad, O., Howells, M., Bazilian, M., & Rogner, H. (2015). A GIS-based approach for electrification planning–A case study on Nigeria. Energy for Sustainable Development, 29, 142-150.

Maambo, Regina Muzamai. 2013. "Project Management Leadership". *SSRN Electronic Journal*.

Muller, R., & Turner, J.R., (2010). Leadership competency profiles of successful project managers, Int.J.Project Management, 28,437–448.

Muller, R., Turner, J.R., (2007). Matching the project manager's leadership style to project type. Int. J. Project Management,25,1,21–32.

Panagiotis Trivellasa, Christos Drimoussisb. (2013) Investigating Leadership Styles, Behavioural and Managerial Competency Profiles of Successful Project Managers in Greece, Procedia - Social and Behavioral Sciences 73 692 – 700

Pauw, W. P. (2015). Not a panacea: private-sector engagement in adaptation and adaptation finance in developing countries. Climate Policy, 15(5), 583-603.

Pinto, J. K., & Slevin, D. P. (1988). Critical success factors in effective project implementation. In D. I. Cleland & W. R. King (Eds.), Project management handbook (2nd ed.). New York: Van Nostrand Reinhold.

Prati, L.M., Douglas, C., Ferris, G.R., Ammeter, A.P., Buckley, M.R., (2003). Emotional intelligence, leadership effectiveness, and team outcomes. The International Journal of Organizational Analysis 11 (1), 21-40.

Northouse, P. (2016). Leadership Theory and Practice. Thousand Oaks, CA: Sage.

Salas, E., D.E. Sims, and C.S. Burke (2005) "Is There a "Big Five" in Teamwork?" Small Group Research (36)5, pp. 555–599.

Saunders, M., Lewis, P., & Thornhill, A., 2009, Research methods for business students fifth edition. Edinburgh Gate Harlow, England: Pearson Education Limited.

Shi, Q., Chen, J., 2006. The Human Side of Project Management – Leadership Skills,

Turner, J. R. & Müller, R. (2005). The project manager‘s leadership style as a success factor on projects: A literature review . Project Management Journal, 36, 1, 49-61.

Turner, J.R., Muller, & R., Dulewicz, V., (2009). Comparing the leadership styles of functional and project managers, Int. J. Managing Projects in Business, 2,2, 198–216.

Tsion Tadele, (2019). Assessing the Importance of Leadership Qualities of Project Managers for Project Success: The Case of Meserete Kristos Church – Relief and Development Association (MKC-RDA)

Yang, R., (2011). The association among project manager's leadership style, teamwork and project success. International Journal of Project Management. 29(3), pp 258–267.

Yared S. (2018). Impact of Soft Project Management Skills on Deliverables of Project Team: Case Study of Projects of Kifiya Financial Technology.

Annex I: Questionnaire

Addis Ababa University
School of Commerce
MASTER PROGRAMS IN PROJECT MANAGEMENT

Dear Sir/Madam

Good day! I am a graduate student in the postgraduate program of Project Management at Addis Ababa University, School of Commerce. I am currently undertaking a research project on the topic "Leadership attributes of project managers for project success; The Case Study of EEP" to fulfill the partial requirement for the Master's Degree program.

You are one of the respondents that have been selected to participate in this research. I would be grateful if you kindly take few minutes of your time from your busy schedule to fill out this questionnaire by reflecting on your personal experience with regard to the issues raised. Your willingness and cooperation in giving genuine information is well appreciated and the information you provide will be used for academic purpose only and will be kept in strict confidentiality.

If you would like to gain further information about this study or have a problem in completing this questionnaire, please contact me via email elroiasn@gmail.com or on my cell phone 0913-66-49-64.

I would like to thank you in advance for your cooperation and taking the time to consider my request.

Yours Sincerely,

Elroi Birara

Section 1: General Information

Please mark √ the answer you have selected.

1. Sex

☐ Female ☐ Male

2. Age

☐ 18-28 ☐ 40-50 ☐ 29-39 ☐ 51 and above

3. Education level

☐ Diploma ☐ Doctorate degree

☐ Bachelor Degree ☐ Other: _____

☐ Master's Degree

4. Work Experience

☐ Less than a year ☐ 2 years to 5 years

☐ 1 year to 2 years ☐ Above 5 years

5. Total number of projects you have been involved in your Organization during the past three years?

☐ <3 ☐ 3-5 ☐ 5-7 ☐ >7

6. Job position

☐ Project Manager/ project coordinator

☐ Senior Engineer

☐ Site Manager/ site coordinator

☐ Other: _____

Section 2: Leadership Attribute and Project Success

Please respond according to your first reaction to each statement by putting **X** or √ mark to show the degree to which you concur with the statement

Part 1: Leadership Attribute

No.	**Personal Trait**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The project managers in EEP are farsighted.					
2	The project team has easy access to the project managers in EEP.					
3	The project managers in EEP have focus on results.					
4	The project managers in EEP have enthusiasm.					
5	The project managers in EEP have persuasiveness.					
6	The project managers in EEP have social behavior, social adaptability and extrovert nature.					

Source: Kaleb T. 2017

No.	**Soft Skill**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The project managers in EEP have communication skills.					
2	The project managers in EEP have interpersonal skills.					
3	The project managers in EEP have coordination skills.					
4	The project managers in EEP have team building and delegation skills.					
5	The project managers in EEP have problem finding, analyzing and solving skills.					
6	The project managers in EEP have time management (temporal) skills.					

Source: kaleb T., 2017

No.	**Emotional Intelligence**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The project managers in EEP have self-awareness.					
2	The project managers in EEP have self-management.					
3	The project managers in EEP have social awareness of the working environment.					
4	The project managers in EEP have a relationship management approach with various stakeholders.					

Source: Kaleb T, 2017

No.	**Ethical value**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The project managers in EEP consider the moral and ethical consequences of decisions					

2	The project managers in EEP take full responsibility					
3	The project managers in EEP are fair to their subordinates					
4	The project manager in EEP have respect towards various stakeholders					
5	The project managers in EEP have honesty and integrity					

No	**Idealized Influence(Attributed)**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The project managers in EEP do beyond their self-interest for the good of the project team.					
2	The project managers in EEP have a way to instill pride and bring respect among project teams.					
3	The project managers in EEP have extraordinary talent of competence.					
	Idealized Influence (Behavior)					
1	The project managers in EEP have a commitment to beliefs.					
2	The project managers in EEP take a stand on difficult issues.					
3	The project managers in EEP talk and display conviction about their values & beliefs to project teams.					
	Inspiration Motivation					
1	The project managers in EEP talks envisioned exciting new possibilities.					
2	The project managers in EEP talk enthusiastically about what need to be accompanied.					
3	The project managers in EEP talk optimistically and expressed their confidence that goals will be achieved.					
	Intellectual Stimulation					
1	The project managers in EEP re-examining the appropriateness of critical project assumptions.					
2	The project managers in EEP see differing perspectives when solving problems.					

Source: Alem S. 2019

Part 2: Project Success

No.		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The project in EEP meets its objectives					
2	The projects in EEP were completed within budget					
3	The project was completed within schedule					
4	Project stakeholders were satisfied with project in EEP					
5	The overall quality of the project outcome was high					

Source: Alem S. 2019

Annex II: Interview Questions

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

MASTER PROGRAMS IN PROJECT MANAGEMENT

Interview Questions for Managing Directors and top management corresponding executive officers

Sir/Madame, good morning/afternoon I'd like to invite you to an interview that will take fifteen minutes of your time. The interview is part of an academic study titled "The Role of Project Manager Leadership Attributes for Project Success: The Case of EEP." I'm hoping you're determined to explain why I'm here. The information will be kept private and used for research purposes only. I'd want to express my gratitude in advance for your kind cooperation.

1. How long have you been serving EEP/EEPCO?
2. How do you describe the leadership role of the project managers for the success of EEP's project?
3. What kind of criteria and consideration EEP use to select project managers and monitor their leadership performance for the success of the project?
4. Is there any strategy or policy to avoid unethical behavior of project managers? Please discuss the trend and challenges related with the application of the policy or the strategy?
5. What kind of method you or project managers under use to motivate/inspire the project team for the success of the project? Is there any formal/informal rewarding system to linking effort and reward? Do you/Project managers can be observed having convincing personality and influencing by creating impression & motivation?
6. What are basic challenges in project leadership to have more successful projects in EEP?
7. What are the criteria for project success in EEP? How is this criteria related to project manager's leadership attributes (i.e. personal trait, emotional intelligence, soft and technical skill, leadership style, and ethical value)?

Annex III- Projects background and project performance of EEP

No	Name of projects	10 month physical work progress	Commencement date	Completion time as per original plan	Amount as per the original plan	Amount as per the revised plan
Power Generation Project						
1.	GERD project	79.89	Dec. 30, 2010	June 30, 2017	ETB 23,560,481,908 & Euro 2,289,733,622	ETB 57,719,720,580 Euro 1,641,873,069 & USD 408,597,014
2.	Koyisha project	44.39	28 Mar. 2016	15 June 2022	1,635,472,701 Euro 20,937,019,779 ETB	
3.	Iyisha-II wind farm project	74.87	25 Feb 2017	26 Mar. 2021	USD 257,285,160 from loan and USD 38,592,774 from own source	-
4.	Aluto Geothermal project	29	June 2014	June 30, 2020		ETB 246,120,000.00
Power Transmission Project (PTP)						
5.	Ethio-Kenya Power System Inter-Connection Project	98.65	25 Dec 2015 & 2016	25 Feb 2018	USD 69,181,837.50 Euro 122,904,689.50 Chinese yuan 706,859,190.2 ETB 937,837,902	-

6.	Beles Sugar Factory PTP	100	Mar. 04, 2015	2016	ETB116,224,971.05 USD11,409,740.86	-
7.	Semera-Afdera PTP	85.75	27 Feb. 2019	Aug, 2021	ETB 159,465,392.00 USD 51,005,002.28	-
8.	Mekele–Daloel PTP	81.09	30 Nov 2018	May 2020		-
9	A.A Transmission and substation Rehabilitation and Upgrading Project	84.58	Oct 2019	May 2021	ETB 25,699,803.38 USD 17,080,245.40	-
10	Bahirdar-Weldiya-Kombolcha PTP	85.04	Jan 2017 & May 2017	Oct. 06 2019 & June 2019	USD 190,911,863.48 ETB 999,221,064.63	-
11	Azezo_Chilga-Fincha-Shanbu-Metu-Mash PTP	68.30	June 2019	Jan 2020	USD 32,008,255.61 ETB 12,527,305.11	ETB 45,202,857.62 USD 30,583,163.13
12	Adama II PTP	76.66	Jan 2019	Jan. 2020	USD 13,871,382.93 ETB 137,481,796.07	-
13	Akaki-Koyae-Kilinto-BoleLemi PTP	99.61		Jan. 2018	ETB 346,020,395.73 USD 81,401,534.2	-
14	GibeIII PTP	82.05	Feb. 2017	Feb. 2020	USD 9,022,659.71 ETB 584,892,164.55	-
15	Dejen-DebreMarkos-Shegoda- Desse_Hormat PTP	54.92	Feb. 2019	May 2021	ETB 917,128,797.65	-
16	Akaki-Dukem-Debrezeit- Modjo-Ginchi PTP	99.81	Feb. 2016	Feb. 2018	ETB 468,064,138.14 USD 38,008,938.00 Euro 9.238.039.41	-

17	Genale Dawa III- Yirgalem - Wolayita Sodo PTP	98.69	April 2018	Dec. 2019	USD 259,004,072.34 ETB 1,052,107,742.77	-
18	Gimbi-Tulu-Kapi PTP	35.45	Oct 2020	Nov. 2021	ETB 121,296,895.13 USD 5,641,280.39	-
19	Head office building construction	23	Jan 2016	Oct. 2019 extended to Feb 2022	ETB 2,450,411,835	-

ANNEX- IV: Name lists of projects under EEP and research target population

No.	Name of projects	No. targeted employee
1.	GERD project	4 managers and 7 site managers and 4 senior engineers
2.	Koyisha project	
3.	Iyisha-II wind farm project	
4.	Aluto Geothermal project	
5.	Ethio-Kenya Power System Inter-Connection Project	3 directors, 7 PMs, 7 site mangers, 6 senior engineers and from consultancy office there are 4 PMs & 3 design mangers
6.	Beles suger factory PTP	
7.	Semera Afdera PTP	
8.	Mekele–Dalol PTP	
9.	Akaki-Koyae-Kilinto-Bole Lemi PTP	
10	Akaki-Dukem- Debrezeit- Modjo- Ginchi PTP	
11	Azezo_Chilga-Fincha-Shanbu-Metu-Mash PTP	
12	Dejen-DebreMarkos-Desse_Hormat PTP	
13	Adama II PTP	
14	Awash-Weldiya PTP	
15	Bahirdar-Weldiya-Kombolcha PTP	
16	Genale Dawa III-Yirgalem-Wolayita Sodo PTP	
17	Gimbi-Tulu-Kapi PTP	
18	GibeIII PTP	
19	Southern District Transmission & Substation Rehabilitation Project	
20	A.A Transmission & substation Rehabilitation and Upgrading Project	
Auxiliary projects		
21	Head Office Construction, New National Load Dispatch Center Construction, Smart Metering project IFRS implementation Company competency, ERP, and Quality assurance projects	5 PM, 2 program manager and 1 director
	Total	**54**