Addis Ababa University

College of Business and Economics

Executive MBA

The Moderating Effect of Top Management Support in the Relationship Between Project Managers' Leadership Styles and Project Success: The Case of Building Megaprojects in Addis Ababa

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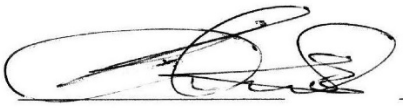
Examiners' Approval Sheet

This research project, written by Lelisa Markos and titled ***"The Moderating Effect of Top Management Support in the Relationship Between Project Managers' Leadership Styles and Project Success: The Case of Building Megaprojects in Addis Ababa"*** has been turned in as partial fulfillment of the requirements for the degree of Executive Master of Business Administration. It complies with university regulations and meets acceptable standards for originality and quality.

Approval by Board of Examiners:

Dr. Asres Abitie		3-7-24
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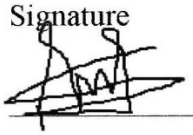
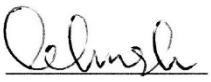
Dr. Baymot Tadesse		July 02, 2024
External Examiner	Signature	Date

Declaration

I, the undersigned, declare that this study entitled ***"The Moderating Effect of Top Management Support in the Relationship Between Project Managers' Leadership Styles and Project Success: The Case of Building Megaprojects in Addis Ababa"*** is my work. I have undertaken the research work independently with the guidance and support of my advisor. This study has not been submitted for any degree or postgraduate program in this or any other institution and all sources of materials used for the research have been duly acknowledged.

Lelisa Markos



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Statement of Certification

This is to certify that the research project prepared by Lelisa Markos, entitled: ***"The Moderating Effect of Top Management Support in the Relationship Between Project Managers' Leadership Styles and Project Success: The Case of Building Megaprojects in Addis Ababa"*** was carried out under the supervision of Asres Abitie (PhD) and submitted in partial fulfillment of the requirements for the Degree of Executive Master of Business Administration complies with the regulations of the University and meets the accepted standards concerning originality and quality.

Dr. Asres Abitie		3-7-24
Advisor	Signature	Date

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Acronyms

AACG	Addis Ababa City Government
AACGMPCO	Addis Ababa City Government Mega Projects Construction Office
AL	Authoritarian Leadership
ANOVA	Analysis of Variance
DL	Democratic Leadership
EI	Emotional Intelligence
ETB	Ethiopian Birr
GDP	Gross Domestic Product
LL	Laissez-faire Leadership
LS	Leadership Styles
MLQ	Multifactor Leadership Questionnaire
MP	Mega Project
PM	Project Manager
PMI	Project Management Institute
PMLS	Project Manager Leadership Styles
PMO	Project Management Office
PS	Project Success
PSC	Project Success Criteria
PSF	Project Success Factor
SPSS	Statistical Package for Social Science
TL	Transformational Leadership
TrL	Transactional Leadership
TMS	Top Management Support

Abstract

The concept of project success in today's project management is the core concern due to increased project failures. So many studies have been done in this area because several factors contributed to the projects' success. The leadership skills of project managers are one of the critical factors contributing to the success of projects. The purpose of this study is to examine the moderating role of top management support in the relationship between project managers' leadership styles and project success on mega projects undertaken by the Addis Ababa City Government Mega Projects Construction Office. The study adopted a cross-sectional survey of descriptive and explanatory design with a quantitative approach to test the study hypothesis. Data were collected from the total population of the study area because it was small and accessible. Eleven (11) projects were selected for the study sample, all the projects currently run under the authority of the Addis Ababa City Government Mega Projects Construction Office. One (1) project manager and 3 (three) key respondents from each project were selected for the questionnaire. Among the total forty-four (44) distributed questionnaires only 36 were responded to and used for analysis. The result of the study shows that transformational and democratic leadership have a statistically significant positive relationship with project success. However, no statistically significant relationship between transactional, laissez-faire, and authoritarian leadership and project success. This implies that contractors and project owners should emphasize the leadership style of the project managers before assigning them to lead projects. In addition, top management support strengthens the relationship between project success and transformational, transactional, and democratic leadership. Nonetheless, top management support did not have a significant role in the relationship between project success and laissez-faire and authoritarian leadership. It shows that to enable the success of a project the multidimensional contribution of the top management on the project has a crucial impact by strengthening the relationship between project success and project managers' leadership styles.

Keywords: *Project Success, Leadership Styles, Top management support, Mega Project, Project Management*

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

Projects are organized to accomplish complex tasks handled by multidisciplinary teams to provide their requirements in various industries. They are characterized by some attributes such as importance, scope, finite life cycle, interdependencies, uniqueness, resources, and conflict (Meredith & Mantel, 2012). These days project management knowledge and practices become very essential because managing projects has become complex and challenging from time to time. The other fact is that many developments and investments for transformation or growth plans are intended to be passed through project activities. It can be recognized from past researchers that project success is the core of project management literature. Project-based systems contribute significant amounts to the global economy despite high failure rates (Turner, Muller, & Dulewicz, 2009; Bakker & Leiter, 2010).

Project success (PS) is the foundation for managing and controlling current projects, and for planning and orienting future projects (Chovichien & Nguyen, 2013). It is believed that things that cannot be measured cannot be improved. Projects are measured through their success criteria even if it has different meanings for different people (Chan & Chan, 2004) and is very context-dependent (Jugdev & Müller, 2005). In traditional articles, almost every researcher on project success identified and discussed the 'iron triangle": time, cost, and quality (Atkinson, 1999) as the basic criteria for project success. Atkinson (1999) tried to identify additional success criteria for IT projects instead of solely attached to the traditional 'iron triangle'.

Many developing countries are currently spending on construction projects due to the high demand resulting from rapid urbanization. Among these projects, megaprojects are becoming very important and increasingly used as the preferred delivery model for goods and services of many businesses and development sectors. However, the results of these projects in terms of time, cost, and quality do not tend to meet the expectations of the stakeholders (Amoah, Berbegal-Mirabent, & Marimon, 2021).

Leadership plays a significant role in project success even if the style and execution of leadership roles vary (Asree, Cherikh, & Baucum, 2019). Many literatures identified various project success factors that largely ignored the project managers' leadership styles (PMLS)

and competence that have an impact on project success (Turner & Muller, 2005). Aga, Noorderhaven, & Vallejo (2016) identified project managers' leadership style plays an important role in project success. Other researchers also investigated the impact of project managers on project success (Turner & Muller, 2005; Turner, Muller, & Dulewicz, 2009; Muller & Jugdev, 2012).

Top management support (TMS) is a weakening or strengthening glue between project leadership behaviors and project success that sometimes leads a project to success or failure (Khan, Long, & Iqbal, 2014). A project manager, even with outstanding skill, can be unsuccessful at any phase of a project if s/he lacks top management support (Meredith & Mantel, 2012).

The ability of project leaders and stakeholders such as senior managers, government, and clients to provide the relevant assistance in the form of systems and structures, finance, materials, worker power, and other physical resources for project managers to operate successfully impacts the success of the project management in construction projects in developing countries (Amoah, Berbegal-Mirabent, & Marimon, 2021).

The construction industry is one of the major developmental project-based sectors playing an important role in the economic growth of a country. Construction projects' success, especially big projects, is not only very important for all project participants but also for national development in the industrialization and modernization age (Dang, Le-Hoai, & Lee, 2012). Ethiopia has registered rapid and high economic growth in the past decade, and Gross Domestic Product (GDP) grew at an average annual rate of 9.2 percent. The share of the construction industry's contribution to the GDP growth performance of the country was 29.22 percent. The industry has been the highest recipient of the government budget in terms of government development program (FDRE Planning and Development Commission, 2021). Despite the higher contribution to the GDP growth performance, the construction industry encountered several challenges such as low-quality provisions of social services and infrastructures; low performance with respect to time and budget; and poor stakeholder satisfaction. To tackle these problems the Ethiopian Government has implemented different strategies, one of the strategies was the establishment of the Addis Ababa City Government Mega Projects Construction Office (AACGMPCO).

AACGMPCO was established on the 21st day of December 2020, through regulation no. 110/2020, to superiorly run the mega projects carried out by the Addis Ababa City

Government (AACG) to tackle the exhibited performance problems of the projects and to use the allocated resources efficiently and effectively as well as execute standardized and quality projects that ensure the economic and social benefit of the residents (Source: Addis Negari Gazeta of the City Government of Addis Ababa). Hence, the success of megaprojects has a huge impact on a community's economic and social development. Addis Ababa City Government Mega Projects Construction Office regulation defined a mega project as a "construction, except roads, water, and houses, within the outskirt of the Addis Ababa City Government (AACG) that the cost of the project is more than one billion birr, including value-added tax or a project entitled to be so by the concerned organ."

In general, no research has been done in the area of building megaprojects in the Ethiopian construction industry to check the moderating effect of top management support on the relationship between project managers' leadership styles and project success. Therefore, a comprehensive literature review was conducted on leadership styles, top management support, and project success. In this research, the Addis Ababa City Government megaprojects' success was assessed with respect to project managers' leadership styles and the moderating effect of top management support.

1.2. Statement of the Problem

Most research in project management showed that there is a direct relationship between transformational leadership and project success; and the moderating effect of top management support in their relationship (Aga, Noorderhaven, & Vallejo, 2016; Fareed, Su, Naqvi, Batool, & Aslam, 2023). Other researchers explored the degrees to which leadership styles affect project outcomes and specific leadership styles are appropriate in specific types of situations (Larsson, Eriksson, Olofsson, & Simonsson, 2015).

Research findings on project success and the role of leadership resulted in a lack of consistency in existing literature. For instance, although several studies (Fareed, Su, Naqvi, Batool, & Aslam, 2023; Aga, Noorderhaven, & Vallejo, 2016; Tabassi & Bakar, 2010; Kissi, Danty, & Tuuli, 2013) identified that transformational leadership to be a predictor of project success, Keegan & Den Hartog (2004) identified the relationship between transformational leadership and project success is not significant. Top management support has been found by many researchers to be one of the critical success factors (Ahmed & Mohamad, 2016; Zwikael, 2008; Boonstra, 2013; Belassi & Tukel, 1996; Young & Jordan, 2008), but according to the study conducted on information systems (IS) by Young & Jordan

(2008), TMS is found to be not simply one of many factors but the most critical success factor. Most of the research studies conducted on top management support were on IS projects and found only to be a critical success factor. Very few researches were conducted on top management support depicting the moderating role in the relationship between leadership styles and project success (Fareed, Su, Naqvi, Batool, & Aslam, 2023; Khan, Long, & Iqbal, 2014).

Today's construction industry faces various problems, time and cost overrun; suffering from attaining the expected standards, and leads to stakeholders' dissatisfaction. Several works of literature (Larsson, Eriksson, Olofsson, & Simonsson, 2015; Müller & Turner, 2007) identified project managers are one of the critical success factors that the ultimate responsibility of the project lies on (Munnes & Bjeirme, 1996). According to the study by Khan, et al., (2019) on the private construction industry, found that transformational leadership style with its dimensions is significantly positively associated with project success. Contingent reward and management by exception (active) dimensions of transactional leadership are also significantly related to project success. Research by Liphadzi, et al., (2015) on the construction industry of South Africa found that positive relationship between transactional leadership and project success. On the other hand, Martin & Edwards (2016) in their works to identify the leadership styles in the construction industry, identified that transformational and democratic leadership styles were the most effective in achieving project success. Therefore, even though the type of leadership styles identified to deliver projects were not consistent among researchers in the construction industry, arguably the construction industry needs better leadership than any other industry for its proper management and performance to meet its defined objectives. It needs the ability to coordinate the activities of numerous individuals participating in tasks that often have high levels of complexity and uncertainty. This indicates the leadership competencies and styles the project manager attributes would affect the performance of a project.

The failure rate (not having to be completed on time, within budget, in required quality, and stakeholders' satisfaction) of construction projects in Ethiopia is elevated due to various factors. Project managers' leadership skills and competency are some of the most significant success factors in Addis Ababa construction projects (Belay, Tekeste, & Ambo, 2017) Therefore, the problems mentioned above and the gap in the literature on project managers' leadership competence and top management support on construction projects in Ethiopia have attracted this new research that empirically assesses whether construction project

success is related to the leadership styles of the project managers, and the impact of top management support in relationship between project managers' leadership styles and project success.

Hence, this research project examined the relationship between the project success of building megaprojects and project managers' leadership styles with the moderating effect of top management support focusing on public megaprojects of Addis Ababa City Government Mega Projects Construction Office.

1.3. Research Objectives

1.3.1. General Research Objectives

The general study of the research is to identify the relationship between project managers' leadership styles and project success using the moderating effect of top management support of selected mega-building projects in Addis Ababa.

1.3.2. Specific Research Objectives

- To explore the effect of project managers' leadership styles on project success and recognize it as a project success factor.
- To assess which leadership styles are more appropriate in delivering construction megaprojects.
- To assess the moderating effect of top management support on the relationship between leadership styles and project success.

1.4. Research Questions

1. How do project managers' leadership styles affect project success?
2. Which project manager's leadership style is more suitable to deliver building megaprojects to meet the project requirements?
3. To what extent does top management support moderate the relationship between project managers' leadership styles and project success?

1.5. Significance of the Study

Different leadership styles might be applied in construction industries to bring projects to their required level. The effect of top management support on project success in particular leadership styles is useful. The uniqueness of this study lies in the framework, as the research attempts to analyze the relationship between project managers' leadership style and project

success with the moderating effect of top management support in building megaprojects of Addis Ababa City Government Mega Projects Construction Office.

Having knowledge of top management support moderating role in the relationship between a project manager's leadership style and project success may be significant for various individuals and groups such as contractors, clients, project managers, and other leaders in the construction industry to improve particular project performance and overall organizational success.

In addition, one characteristic of megaprojects is complexity which leads to cost overrun and needs the strict follow-up and support of the top management.

Finally, the findings of this study may be used as a source of information for further research in this area by broadening the population to country-wide or in all categories of megaprojects.

1.6. Scope of the Study

The scope of the study focuses on assessing the leadership styles of project managers on project success through the moderating effect of top management support of building megaprojects in Addis Ababa. Even if construction megaprojects can be public, private-public, and private ventures, this research will only concentrate on public megabuilding construction projects managed by Addis Ababa City Government Mega Projects Construction Office. Despite that, there are a lot of megaprojects being undertaken throughout the country such as infrastructures, dams, high-rise buildings, and railways, it is difficult to cover all projects under this specific research.

In addition, the study lies on the visionary leadership theory which consists of transformational and transactional leadership styles and other leadership styles addressed in (Frame, 1987; Northouse, 2021) which are authoritarian, democratic, and laissez-faire leadership styles. Several project success criteria have been researched and added to the project management literature in the past decades. Due to the time limitation and also some criteria that have no significant effect on construction projects, the researcher limited the project success criteria to the 'iron triangle' (time, cost, and quality) and stakeholder satisfaction.

1.7. Definition of Key Terms

- **Authoritarian Leadership:** a management style where an individual possesses total decision-making power and retains as much authority as possible, often requiring followers to strictly adhere to their directives without much freedom or participation.
- **Construction Projects:** an activity related to building structures that must be completed within the specified time frame to achieve the specified goal.
- **Democratic Leadership:** a leadership style in which members of the group participate in the decision-making process.
- **Laissez-faire Leadership:** a leadership style that takes a hands-off approach to leadership and gives others the freedom to make decisions.
- **Leadership:** a process whereby an individual influences a group of individuals to achieve a common goal.
- **Leadership Styles:** refers to the leader's behaviors, attitudes, and actions in influencing and directing others towards achieving common goals.
- **Project:** a temporary endeavor undertaken to create a unique product, service, or result.
- **Project Management:** the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. It is accomplished through the appropriate application and integration of the project management processes identified for the project.
- **Project Manager:** the person assigned by the performing organization to lead the team that is responsible for achieving the project objectives.
- **Project Success:** finalizing projects within the defined time, budget, and quality to satisfy all stakeholders.
- **Moderation:** describes a situation in which the relationship between two constructs is not constant but depends on the values of a third variable.
- **Moderator Variable:** changes the strength, or even the direction of a relationship between two constructs in a model.
- **Mega Projects:** a complex, large-scale operation that usually takes many years to complete.
- **Top Management Support:** is the involvement or participation of top-level management in project or organizational activities or when senior management, the

CEO, and other senior managers devote time to plans review, results follow-up, and facilitating management problems.

- **Transactional Leadership:** a leadership style that utilizes rewards and punishments to motivate and direct followers.
- **Transformational Leadership:** a leadership style that inspires and encourages followers to perform in ways that create meaningful change.

1.8. Organization of the Research

This project research is organized into five chapters: introduction; literature review; research methodology; results and discussion; and conclusion and recommendations.

Chapter one deals with the introduction part of the study which describes the background, research problem, objectives, research questions, significance, scope of the study, and definition of key terms.

Chapter two provides a review of various related literature such as articles, books, conferences, etc. It also describes the theoretical perspective and related empirical studies on which the research is based to enable to creation of the conceptual framework. It also contains research hypotheses and the operationalization of variables.

Chapter three describes the research methodology and details the research design, research approach, the study population and sample, data collection methods, reliability and validity of the measurement instruments, and data analysis techniques.

Chapter four deals with the study findings including the response rate, diagnostic test, and descriptive statistics of study variables ratings. Additionally, correlation analysis, test of hypothesis using multiple linear regression analysis, and discussion of the study finding results are presented in detail.

Chapter five presents the summary of the study findings and conclusions of the study. Additionally, recommendations, limitations of the study, and possible areas of future study are presented in this chapter.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Introduction

In this chapter, the theoretical literature review, empirical review, and conceptual framework of the research study are examined. In addition, the conceptual framework, research hypotheses, and operationalization of variables have been covered in this chapter.

2.2. Theoretical Review

Several theories elaborate on the relationship between project managers' leadership styles, project success, and top management support. Leadership theory, leadership styles, project management, project success, mega projects, and top management support concepts are summarized in the following sections.

2.2.1. Concepts and Definition of Leadership

One of the highly sought-after and highly valued commodities in this modern era that the public has become increasingly captivated by its idea is arguably leadership (Northouse, 2016). Scholars who study leadership have struggled for many decades to get the right definition for leadership as it has resulted in several definitions. According to Rost (1991), leadership is a mutual influence process, involving both leaders and followers. Northouse (2016) studied various concepts of leadership from the early 20th century and identified four components that center to the phenomenon. These are process, influence, group, and common goals. Therefore, leadership is a process whereby an individual influences a group of individuals to achieve a common goal.

2.2.2. Leadership Theory

Six main schools of leadership theory emerged in the past 70 years in leadership literature, some of which suggest that different leadership styles are appropriate in different competitive situations (Dulewicz & Higgs, 2003). All these leadership schools were derived from the general management literature based on considerations of leadership in organizations, and have made distinct contributions (Turner & Muller, 2005).

The Trait Approach: It was the first systematic attempt to study leadership (Northouse, 2016). It was based on the idea that leaders are born with traits and that only "great" people possess them. It focused on identifying the innate qualities and characteristics possessed by great social, political, and military leaders, which differentiated them from followers (Northouse, 2016).

The Behavioral Approach: It dominated in the mid-1900s and focused on how leaders behave and how managers act in different situations. Exclusively focuses on what leaders do and how they act. Behavior can be adopted, implying that managers can learn or be taught to be effective (Northouse, 2016). According to different research studies on behavioral approaches two general kinds of behaviors: task and relationship behaviors were identified. Task behaviors facilitate the accomplishment of goals while relationship behaviors help followers feel comfortable with themselves, with each other, and with the situation in which they find themselves (Northouse, 2016).

The Situational Approach: It describes different times, tasks, and organizations that may require different types of leaders or leadership behavior. These models imply that leaders can and do change their behavior as the needs change. It holds that no leadership style is appropriate for all situations and seeks matches between styles and situations. Different situations demand different kinds of leadership and to be an effective leader requires that a person adapt his or her style to the demands of different situations (Northouse, 2016).

The Visionary School: was developed by successful business leaders leading their organizations through change (Turner & Muller, 2005). Bass (1990) identified two types of leadership, transactional and transformational.

The Emotional Intelligence School: A Leader's emotional intelligence (EI) has a greater impact on his or her success as a leader and the performance of his or her team than does the leader's intellectual capability. Great leadership works when leaders drive emotions positively and bring out everyone's best. Leaders tend to speak more and also are observed more to set the emotional standard of their organization. The four dimensions of emotional intelligence are self-awareness, self-management, social awareness, and relationship management. Additionally, six leadership styles were identified in this category; visionary, coaching, affiliative, democratic, pace-setting, and commanding (Goleman, Boyatzio, & Mckee, 2002).

The Competency School: It identifies the competencies of effective leaders and different combinations of competencies can lead to different styles of leadership, appropriate in different circumstances, producing transactional leaders in situations of low complexity and transformational leaders in situations of high complexity (Dulewicz & Higgs, 2003). Based on their observations and analysis of the literature, Dulewicz & Higgs (2003) identified

three types of competencies that explain most managerial performance: Intellectual (IQ), Managerial skill (MQ), and Emotional (EQ).

2.2.3. Leadership Styles

From the beginning of the 20th century to the present day, researchers have focused a great deal of attention on the unique characteristics of successful leaders. Various leadership styles have been developed by pioneering researchers of the leadership literature. Leadership style is driven by personal leadership philosophy which approaches a distinctive set of beliefs and attitudes about the nature of people and the nature of work.

Considering several kinds of research on project management, for this study Lewin's leadership styles; laissez-faire, democratic, and authoritarian leadership styles (Lewin, Lippitt, & White, 1939; Frame, 1987; Northouse, 2021) and visionary leadership styles; transformational and transactional leadership (Bass, 1985) were used and discussed below. Bass (1990) developed the Multifactor Leadership Questionnaire (MLQ) to test transactional, transformational, and non-transactional laissez-faire leadership styles. The other styles were tested using questionnaires developed by different literature and used by Northouse (2021).

Transformational Leadership

It is a process that changes and transforms people concerned with emotions, values, ethics, standards, and long-term goals (Northouse, 2016). It raises followers' awareness of transcendent collective interests and helps followers achieve extraordinary goals. It is conceptualized to comprise the following five factors (Antonakis, Avolio, & Sivasubramaniam, 2003);

Idealized influence (attribute) refers to the socialized charisma of the leader, whether the leader is perceived as being confident and powerful, and whether the leader is viewed as focusing on higher-order ideals and ethics;

Idealized influence (behavior) refers to charismatic actions of the leader that are centered on values, beliefs, and a sense of mission;

Inspirational motivation refers to the ways leaders energize their followers by viewing the future with optimism, stressing ambitious goals, projecting an idealized vision, and communicating to followers that the vision is achievable;

Intellectual stimulation refers to leaders' actions that appeal to followers' sense of logic and analysis by challenging followers to think creatively and find solutions to difficult problems.

Individualized consideration refers to leader behavior that contributes to follower satisfaction by advising, supporting, and paying attention to the individual needs of followers, thus allowing them to develop and self-actualize.

Transactional Leadership

Transactional leadership is an exchange process based on the fulfillment of contractual obligations and is typically represented as setting objectives and monitoring and controlling outcomes. It is conceptualized to comprise three factors;

Contingent reward leadership refers to leader behaviors focused on clarifying role and task requirements and providing followers with material or psychological rewards contingent on the fulfillment of contractual obligations

Management-by-exception active (i.e., active corrective transactions) refers to the active vigilance of a leader whose goal is to ensure that standards are met; and

Management-by-exception passive (i.e., passive corrective transactions) leaders only intervene after noncompliance has occurred or when mistakes have already happened.

Laissez-Faire Leadership

Laissez-faire leadership, sometimes labeled as non-leadership, represents the absence of a transaction of sorts concerning leadership in which leaders avoid making decisions, abdicate responsibility, and do not use their authority. The laissez-faire leader engages in minimal influence; does not attempt to influence followers' activities; and does not attempt to appraise or regulate their progress (Northouse, 2021). It is considered active to the extent that the leader ‘‘chooses’’ to avoid taking action. This component is generally considered the most passive and ineffective form of leadership.

Democratic Leadership

Democratic leadership represents when leaders work with followers rather than controlling them and treat followers as fully capable of doing work on their own, trying to treat everyone fairly without putting themselves above followers. In addition, helps each follower to achieve personal goals, guides rather than directs, makes sure to provide the priority of everyone is heard, listens to followers in supportive ways, and assists in becoming self-directed. The outcomes of democratic leadership are mostly positive. First, democratic

leadership results in greater group member satisfaction, commitment, and cohesiveness. Second, under democratic leadership, there is more friendliness, mutual praise, and group-mindedness. Followers tend to get along with each other and willingly participate in matters of the group, making more "we" statements and fewer "I" statements. Third, democratic leadership results in stronger worker motivation and greater creativity. People are motivated to pursue their own talents under the supportive structure of democratic leadership. Finally, under a democratic leader group members participate more and are more committed to group decisions (Northouse, 2021).

Authoritarian Leadership

Authoritarian leadership perceives group members as needing direction; and needs to control them, control what they do, and exert influence over them. They determine tasks and procedures for group members but may remain aloof from participating in group discussions. Authoritarian leaders do not encourage communication among group members; instead, they prefer that communication be directed to them. In evaluating others, authoritarian leaders give praise and criticism freely, but it is given based on their own personal standards rather than based on objective criticism (Northouse, 2021).

2.2.4. Projects

According to PMI (2017) "a project is a temporary endeavor undertaken to create a unique product, service, or result." The major goal of a project is to satisfy customer's needs like most organizational endeavors. However, it has specific characteristics, such as an established objective, a defined life span with a beginning and an end, involvement of several departments and professionals, doing something that has never been done before, and specific time, cost, and performance requirements; that differentiate it from other efforts of the organization (Larson & Gray, 2011). Examples of projects are developing a new product or service, improving a business process within an organization, developing a new pharmaceutical compound for the market, and constructing a building. Nevertheless, this study focused on construction projects particularly building megaprojects.

2.2.5. Project Management

Project management is defined as "the application of knowledge, skills, tools, and techniques to project activities to achieve project requirements" (PMI, 2017). Charvat (2003) defines project management as a set of tools, techniques, and knowledge that, when applied, helps to achieve the three main constraints of scope, cost, and time. Project

management is accomplished through the appropriate application and integration of the project management processes identified for the project and enables organizations to execute projects effectively and efficiently (PMI, 2017).

2.2.6. Project Success

One of the most common challenges in project management is determining whether or not a project is successful. Traditionally, the project management metrics of time, cost, scope, and quality have been the most important factors in defining the success of a project. More recently, practitioners and scholars have determined that project success should also be measured with consideration toward the achievement of the project objectives (PMI, 2017).

Project Success is a topic frequently discussed in the project management field and measured against the project's overall objectives and project management success (Serrador & Turner, 2015). Recently, academics and project management practitioners increasingly recognized that the days when we could measure success in terms of only iron triangle (cost, schedule, and technical objectives) are gone.

Silva, Warnakulasuriya, & Arachchige (2016) identified two dimensions of construction project success criteria. The efficiency dimension which is a short-term perspective (cost, time, quality, safety, and cash-flow management), and the effectiveness dimension is a long-term perspective (environment performance, client satisfaction, employee satisfaction, profitability, and learning & development.

According to Kerzner (2017), project success is defined as the completion of an activity:

- Within the allocated time period
- Within the budgeted cost
- At the proper performance or specification level
- With acceptance by the customer/user
- With minimum or mutually agreed upon scope changes
- Without disturbing the main workflow of the organization
- Without changing the corporate culture

Thus, even though there is no agreement among researchers and no specific success criteria in the literature, this research will deploy project success criteria that are more suitable to construction projects and ranked top based on various literature. Iron triangle project success criteria (cost/budget, time/schedule, and quality/performance), and stakeholder satisfaction

will be evaluated based on (Müller & Turner, 2010; Görög, 2013a; Blaskovics, 2014; Kerzner, 2017). This concept is also supported by Aga, Noorderhaven, & Vallejo (2016), when it comes to construction and engineering projects, success criteria are objective, well-accepted, and measurable, usually by the conventional triangle criteria of time, budget, and compliance with the client's terms of reference, or 'quality'. Therefore, to summarize for measurement of the project success the first four criteria identified by Kerzner (2017) and that of Müller & Turner (2010) are broadly applied to be valid and completely acceptable in building mega projects.

Table 2-1 Summary of Project Success Criteria

Project Success Measurement Items
Time
On-schedule completion of the project
Cost
Completion of the project within the allocated budget
Quality
Completion of the scope of all project works
Meeting project specifications and outcomes by the time of handover to the client
Client/owner use of the outcomes of the project
Stakeholders' Satisfaction
Satisfaction of the project client/owner
Satisfaction of the contractor by the outcome of the project
Satisfaction of project team members about the process and outcomes of the project

Source: (Müller & Turner, 2010)

2.2.7. Construction Megaprojects

A construction project is a series of interrelated construction tasks, i.e. constructing, renovating, refurbishing, retrofitting, or adapting a building or other built asset such as tunnels, roads, railways, bridges, dams, and others which are undertaken in a systematic order over a temporary timeframe and results in the completion of the project and the creation of a tangible product or outcome.

Megaprojects are large-scale, complex ventures that typically cost a billion dollars or more, take many years to develop and build, involve multiple public and private stakeholders, are transformational, and impact millions of people (Hirschman, 2014). However, the

characteristics that elevate a project to mega-status are much more complex than simply project cost.

There are no formal megaprojects definitions in the construction phenomenon as there is no specific way to determine whether a project is mega or not. There is a definite collection of projects that are universally realized and referred to as 'megaprojects' (Fiori & Kovaka, 2005).

According to Fiori & Kovaka (2005), five project characteristics are common in construction megaprojects: cost, complexity, risk, ideals, and visibility. Therefore, high cost, high complexity, high risk, lofty principles, and high visibility are factors that define construction megaprojects. According to Warrack (1985) projects with a lesser budget, such as $100 million, might use a relative approach depending on the circumstances. Mega-project is defined in a proclamation to establish Addis Ababa City Government Mega Projects Construction Office as "a construction, except roads, water, and houses, within the outskirts of the Addis Ababa City Government that the cost of the project is more than one billion birr, including value-added tax or a project entitled to be so by the concerned organ."

Therefore, this research project considered the definition that the Addis Ababa City Government has used through its proclamation to establish the Addis Ababa City Government Mega Projects Construction Office by regulation no. 110/2020, for the construction of mega projects in Addis Ababa.

2.2.8. Top Management Support

Top management exists because different levels of management are available in an organization. According to various literatures, different ranges of management can be labeled as top management, such as chief executive officer, chief financial officer, chief engineering service officer, and other senior managers. Top management support is considered as the amount and nature of the support that the project leader expects from the top management both for the project and for himself as a leader (Pinto & Slevin, 2006).

Top managers play an important role in creating and providing the needed conditions for project success; defining the scope of a project, and selecting of project team as well (Staehr, 2010; Boonstra, 2013).

Boonstra (2013) identified top management support as a multidimensional construct and these dimensions are used to measure top management support's effect on project success.

These dimensions are providing resources, structural arrangements, communication, expertise, and power.

Additionally, top management support has been examined in various studies as one of the critical success factors. For instance, Belassi & Tukel (1996) and Young & Jordan (2008) argued that top management support is the most critical success factor in project success.

Understanding from the literature, top management support is one of the critical project success factors, and this study checked whether it strengthens or weakens the relationship between project managers' leadership styles and project success.

2.3. Empirical Review

In recent years, researchers have explored the link between various project managers' leadership styles and project success, showing that the leadership styles of project leaders are one of the major project success factors. In addition, top management support was identified in different literature and considered as a moderating effect in the relationship between project success factors and project success criteria.

2.3.1. Project Manager's Leadership Styles and Project Success

Blaskovics (2014) studied the impact of leadership styles on PS in the case of multinational companies. The research had a twofold aim. One of the aims was to identify the project success criteria that the project managers had an impact on. The second aim was to identify the leadership styles used by the project managers to deliver projects. The researcher conducted the study through a library and field research and found that the project manager has a direct impact on two project success criteria namely; project triangle (time, cost, quality) and stakeholder satisfaction. Further, he studied to check the project manager's leadership styles (namely; democratic and dictatorial) to deliver projects and found that project managers mainly use the democratic leadership style to ensure project success. Nevertheless, the study was conducted on the ICT of multinational companies, it showed the relationship between project managers and project success.

Other researchers Liphadzi, Aigbavboa, & Thwala (2015) in South Africa's construction industry studied the relationship between leadership styles and project success. The research aimed to identify which project managers' leadership style is more prevailing in the construction industry of South Africa in delivering projects. It suggested that there is a relationship between leadership style and project success. According to the study,

transactional leaders in the South African construction industry are more likely to have a successful project than any other type of leadership style. In addition, the findings revealed that transformational leadership has a strong positive correlation with project success even if it is not as strong as that of the transactional leadership style. On the other hand, there was a weak correlation between democratic and project success; and no significant relationship between autocratic and laissez-faire leadership styles and project success.

One of the important research studied on this topic is the work of Muller & Turner (2007), titled 'Matching the Project Manager's leadership style to the project type.' The researchers used both qualitative and quantitative studies and concluded that a project manager's leadership style influences project success and different leadership styles are appropriate for different types of projects. According to the study, on engineering and construction projects more transactional leadership styles are appropriate.

2.3.2. Top Management Support Effect on Leadership Styles and Project Success

According to various literature, top management success has been considered a project success factor and had a moderating effect on other factors. As per the study by Fareed, Su, Naqvi, Batool, & Aslam (2023) top management support has a moderating effect on the relationship between transformational leadership and project success. It showed that transformational leadership positively significantly affects project success and also top management support positively influences project success. In addition, top management support strengthens the relationship between transformational leadership and project success.

Ahmed & Mohamed (2016) explored the relationship between multidimensional top management support and project success. The researchers tried to empirically relate the multidimensional top management support (i.e., providing resources, communication, expertise, structural arrangements, and power) to project success and found significant positive relationships between all five dimensions of top management support and project success.

2.4. Conceptual Framework

The conceptual framework of this research was developed based on different literature studies and based on leadership and project management theories as the theoretical

framework through which the relationship between project managers' leadership styles and project success with the moderating effect of top management support was assessed.

The dependent variable in this research was project success which will be measured with the 'iron triangle' (time, cost, and scope/quality) and customer satisfaction. Based on the different reviewed literature, the independent variable, project managers' leadership styles were identified and operationalized into transformational, transactional, laissez-faire, democratic, and authoritarian leadership styles. Finally, top management support, the moderating variable between the dependent and independent variables was examined based on the available literature.

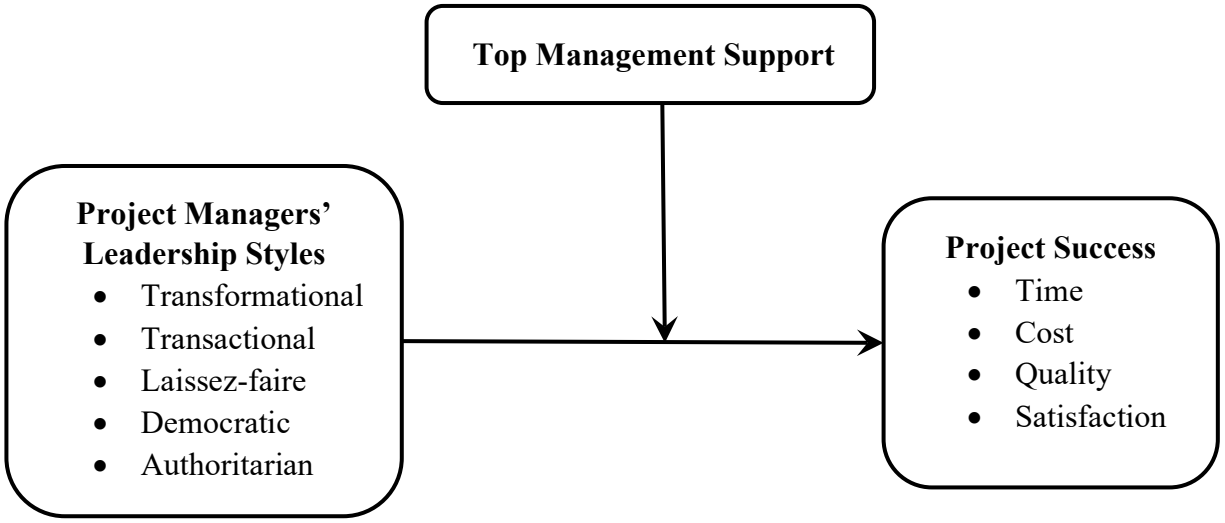

Figure 2.1 Conceptual Framework: from Fareed, et al., (2023) and the Researcher

2.5. Research Hypothesis

The following research hypotheses are developed based on the research objectives and conceptual framework above.

H1: The joint effect of project managers' leadership style significantly affects project success.

H2: Top management support moderates the relationship between transformational leadership style and project success.

H3: Top management support moderates the relationship between transactional leadership style and project success

H4: Top management support moderates the relationship between laissez-faire leadership style and project success

H5: Top management support moderates the relationship between democratic leadership style and project success.

H6: Top management support moderates the relationship between authoritarian leadership style and project success

2.6. Operationalization of Variables

The variables and items used in this study were adapted from a review of earlier empirical studies. In this study, independent variables (project managers' leadership styles), dependent variables (project success), and moderating variables (top management support) were included and summarized as follows.

Independent Variable: The independent variables are the project managers' leadership styles that may or may not affect the construction project success based on the application areas identified by different scholars (transformational, transactional, democratic, authoritarian, and laissez-faire). In measuring leadership styles, the Multifactor Leadership Questionnaire (MLQ) has become a popular and well-validated instrument in leadership research. The MLQ includes thirty-six (36) items measuring three core leadership styles: transformational, transactional, and laissez-faire (Hinkin & Schriesheim, 2008; Bass & Avolio, 1989). Democratic and authoritarian will be measured based on (Lewin, Lippitt, & White, 1939) leadership styles which comprises twelve (12) questions.

Dependent Variable: The dependent variable is project success. It is difficult to get a well-established approach to measure project success in the project management literature as it varies by industry (Ika, 2009; Joslin & Müller, 2015; Todorović, Petrović, Mihić, Obradović, & Bushuyev, 2015). Many authors identified different ways of judging project success and various criteria to measure construction project success but no general agreements. In this research, the researcher will implement project success dimensions identified by (Müller & Turner, 2010), cost performance, time performance, quality performance, and stakeholder satisfaction that seem to fit the construction projects. Based on Müller & Turner (2010) nine (9) questions were deployed to measure the project success.

Moderating Variable: The moderating variable is top management support. Different dimensions of top management support were discussed in various literature, and those

dimensions best fit the construction industry and megaprojects shall be vigorously selected for this research and assessed for both moderating effect and direct impact on project success. Thus, eight (8) questions are identified from various literature to measure the top management support to be considered as the moderating variable (Staehr, 2010; Belassi & Tukel, 1996; Young & Jordan, 2008; Boonstra, 2013).

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Introduction

Research methodology is the heart of research that indicates the procedures and principles of logical thought processes that are implemented in a scientific investigation.

This chapter comprises the methodology of the research that contains information about the research approach, research design, population and sampling technique, data collection, data measurement, and data analysis.

3.2. Research Approach

Quantitative, qualitative, and/or mixed research approaches are adopted to conduct a research study. Qualitative and quantitative research techniques are mostly compared as per their strengths to be selected as the best technique specific to the research. Since the research is objective-based and numerical in nature, a quantitative research approach has been adopted to properly test the variables.

3.3. Research Design

Research design is the general plan through which the research questions are to be addressed (Saunders, Lewis, & Thornhill, 2012). This research deployed both descriptive and explanatory research studies to address properly the research questions. As noted by Collis & Hussey (2021), descriptive researches are conducted to identify and describe the detailed characteristics of phenomena, and most of the research questions that fall in this category start with 'what', 'how', and 'which'. In this study, research question number two was addressed under descriptive type. On the other hand, explanatory research which is a continuation of descriptive research has been deployed to test research questions number one and three. In explanatory research design, the researcher goes beyond merely describing the characteristics of phenomena to explaining the cause and effect of the phenomenon under study. The aim is to understand phenomena by testing hypotheses and discovering causal relationships between variables (Collis & Hussey, 2021).

In addition, the study was cross-sectional in that data was collected across the public building megaprojects in Addis Ababa once, over a short period of time, to determine the relationship among the study variables. According to Collis & Hussey (2021), cross-sectional studies are conducted when there are time constraints or limited resources, and so that the studies are inexpensive and are conducted simultaneously.

3.4. Population and Sampling Technique

The study used a target population of public building megaprojects located within the outskirts of Addis Ababa and owned by the Addis Ababa City Government Mega Project Construction Office. Based on the information from the office, there are 11 (eleven) projects currently under their direct control. Therefore, no need to obtain a sample since the population is small and manageable. All projects under the Addis Ababa City Government Mega Project Construction Office were selected and checked whether they are mega or not based on criteria of cost, complexity, risk, ideals, and visibility (Fiori & Kovaka, 2005). Each project has at least one project manager and all of them were contacted to test their own leadership styles and the top management support impact on the success of their project. In addition, the resident engineer and client representative of each project were used, and from each project, one other staff of the contractor was purposively selected, to test the project manager's leadership style and top management role on project success.

3.5. Method of Data Collection

Data is a collection of facts, figures, objects, symbols, and events gathered from different sources. The data used in this paper was derived from primary data collection methods. Primary data collection involves the collection of original data directly from the source or through direct interaction with the respondents. Due to the quantitative nature of the research and to meet its objective the researcher has used primary sources of data which are obtained through the self-administered questionnaire survey method targeting the construction sector of public building megaprojects. The questionnaire survey method was adopted for this study because it requires less energy and time to administer and offers anonymity to the respondents.

3.6. Research Instrument

In this research, self-administered and closed-ended/structured questionnaires were used as the research instrument. These types of questionnaires were chosen because they facilitate the speed and accuracy of recording and the process of analyzing the relevant data for the study. The questionnaires have five parts. The first part consists of questions about the general information of the respondent and the project. The second part comprises questions about the independent variable PMLS which comprises forty-eight (48) leadership questions combined from Karl Lewin Leadership Styles as used by Northouse (2016) and the MLQ as developed by Bass & Avolio (1989). The third part is questions about the moderating variable TMS in which eight (8) questions were developed and the fourth is nine (9)

questions about the dependent variable PS. Parts two to four of the questionnaires were rated on a Likert scale ranked as **1:** *Not at all*, **2:** *Rarely* **3:** *Sometimes*, **4:** *Fairly often,* **5:** *Frequently*.

The fifth part of the questionnaire comprises five (5) megaprojects determinant questions measured on a Likert scale ranked as **1:** *Not at all*, **2:** *Low* **3:** *Moderate,* **4:** *High,* **5:** *Very High*. From these measurement items, composite measures of project managers' leadership styles and top management support on project success were determined.

3.7. Method of Analysis

Before statistical analysis, the data were comprehensively inspected for missing data, outliers, multi-collinearity, homoscedasticity, and normality. The collected primary data, the general information, project managers' leadership style, top management support, and project success variables were coded and subjected to statistical analysis according to their types.

Descriptive statistics (mean, standard deviation, percentage, and frequency distribution) were used to describe the research sample data.

The inferential statistical methods (such as Pearson's Correlation and Multiple Linear Regression or Moderation Analysis) were used to test the effects of the independent variables on the outcome variable using the SPSS software package.

Pearson's correlation was used to reflect the strength and/or direction of the association between two variables. According to Saunders et al. (2012) and Hair et al (2014), the output of correlation lies between +1 to -1, indicating a perfect positive and perfect negative relationship respectively and 0 indicates no linear relationship. Classification of the strength of the relationship is based on the table 3-1 below. Hence, Pearson's coefficient of correlation was calculated to determine the coefficient between project managers' leadership styles and project success; and also between the top management support and project success.

Moderation analysis determined whether the affiliation between leadership styles and project success depends on top management support. The moderation analysis is essentially a multiple regression equation with interactive elements. Moderated multiple regression analysis was used to test perceived interaction as suggested by Baron & Kenny (1986).

Table 3-1 Classification of the strength of correlation

Positive Values	Negative Values	Correlation Strength
0.8 to 1	-0.8 to -1	Very Strong
0.6 to 0.8	-0.6 to -0.8	Strong
0.35 to 0.6	-0.35 to -0.6	Moderate
0.2 to 0.35	-0.2 to -0.35	Weak
0 to 0.2	0 to -0.2	Very weak

Source: Saunders et al. (2016) and Hair et al. (2014)

3.8. Mathematical Model for Regression Analysis

Based on the conceptual framework formulated for the research, project managers' leadership styles: Transformational Leadership (TL), Transactional Leadership (TrL), Laissez-faire Leadership (LL), Democratic Leadership (DL), and Authoritarian Leadership (AL) are independent variables while the overall Project Success (PS) is a dependent variable and Top Management Support (TMS) is the moderating construct.

$$PS = \beta_0 + \beta_1(TL) + \beta_2(TrL) + \beta_3(LL) + \beta_4(DL) + \beta_5(AL) + e_i$$

Where:

PS: Overall project success

TL: Transformational Leadership

TrL: Transactional Leadership

LL: Laissez-faire Leadership

DL: Democratic Leadership

AL: Authoritarian Leadership

TMS: Top Management Support

e_i: The error term

While β_1, β_2, β_3, β_4, and β_5 are coefficients of independent variables

3.9. Reliability and Validity

The quality of research is evaluated using the concepts of reliability and validity. They indicate how well technique, method, or tests measure something.

Reliability is to be checked using Cronbach's coefficient alpha, which is a method used to test whether measurements have dependency and consistency. Reliability is checked for each of the variables in this study (PMLS, TMS, and PS).

The reliability measured and its Cronbach's coefficient alpha close to 1 is the better. A value of less than 0.7 is considered to be poor and above 0.7 is considered to be good and acceptable. For this study, the Cronbach's alpha value is summarized as below.

Table 3-2 Reliability Statistics

SN	Variable	Number of Items	Cronbach's Value
	Idealized Influence - Attribute	*4*	0.877
	Idealized Influence - Behavior	*4*	0.883
	Inspirational Motivation	*4*	0.884
	Intellectual Stimulation	*4*	0.885
	Individualized Consideration	*4*	0.886
1	Transformational Leadership	20	0.882
	Contingent Reward	*4*	0.879
	Management-by-Exception Active	*4*	0.884
	Management-by-Exception Passive	*4*	0.902
2	Transactional Leadership	12	0.882
3	Laissez-faire Leadership	4	0.935
4	Democratic Leadership	6	0.876
5	Authoritarian Leadership	6	0.914
6	Top Management Support	8	0.880
7	Project Success	9	0.880
	Overall	65	**0.897**

Source: Data Survey, from SPSS

The result of Cronbach's coefficient alpha in the above table showed that the values are above the accepted level, which is 0.7.

Validity is checked using Pearson's correlation, and it requires addressing credibility, transferability, and confirmability. It tells us the extent to which the results measure what they are supposed to measure. The validity of MLQ questionnaires was repeatedly shown as an assessment tool to measure leadership styles (Dulewicz & Higgs, 2003). Different researchers proved the validity of the questionnaires and used them to test their models (Dulewicz & Higgs, 2003; Müller & Turner, 2010). Therefore, the measuring tool is valid for the study.

3.10. Ethical Considerations

To conduct responsible research, the researcher should think about ethics. Sets of principles in ethical considerations such as voluntary participation, informed consent, anonymity, confidentiality, potential for harm, and results communication guide the research design and practices. Ethical concerns will emerge as you design and plan your research, seek access to organizations and individuals, and collect, analyze, manage, and report your data. In the context of research, ethics refers to the standards of behavior that guide your conduct in relation to the rights of those who become the subject of your work or are affected by it (Saunders, Lewis, & Thornhill, 2012, p. 226).

The researcher clearly described the purpose of the study to the participants and maintained the participants' privacy, dignity, and confidentiality and the collected data shall be used for this study only.

In general, the research has been conducted based on the ethical and moral obligation of the research writing and reporting.

CHAPTER FOUR

4. RESULTS AND DISCUSSIONS

4.1. Introduction

This chapter comprises the empirical findings of the survey and an analysis of the results. The paper presented in this part of its section an overview of respondents' profiles and data distribution using descriptive statistics, correlation, and regression analysis with a respective discussion of the results. The analysis started with a description of the respondents' demographic profiles. After this, descriptive, correlation, and regression analyses of the data were done and finally, the results of the analyses were discussed. Statistical Package for Social Science (SPSS version 27) software was used for analyses.

4.2. Response Rate

A total of forty-four (44) questionnaires were sent online after being prepared on Google form to the key respondents of the eleven (11) projects found under the administration of Addis Ababa City Government Mega Projects Construction Office. All project managers of the eleven (11) projects were contacted to rate their leadership styles and top management support on the projects they were leading. In addition, three (3) key respondents from each project, one (1) from the client representative (Addis Ababa City Government Mega Projects Construction Office), one (1) from the consultant side (the resident engineer), and one (1) from the contractor team, purposively selected, were contacted to rate the project managers' leadership styles and the role of top management support on the project success. The data were collected in the period between April 2024 and May 2024.

Among the distributed questionnaires, thirty-six (36) were filled properly and sent online to the Google form. The remaining eight (8) questionnaires were rejected due to not responding, incomplete, and invalid responses. The overall response rate for the research was 81.82 percent, which indicated the response was acceptable for data analysis and discussion of the study.

4.3. Demographic Data

The demographic data of the respondents collected for this study were gender, age, level of professional education, educational background, professional qualification, unit type experience. In addition, project information such as project type, complexity, budget, and duration were collected. The demographic profile of the respondents is shown in Table 4-1 below.

Gender: nearly 86 percent of the respondents were male and 14 percent were female. This shows that the majority of the building megaprojects under the Addis Ababa City Government Mega Projects Construction Office have been managed by men.

Age: about 61 percent were in the range of 31 to 40 years of age, around 25 percent between 41 to 50 years, about 8 percent between 18 to 30 years, and above 51 years was around 7 percent. Therefore, most of the engineers in the industry were young and energetic workers with less than 40 years.

Level of Education: about 58 percent were master's degree holders and the remaining 42 percent were first-degree workers.

Educational Background: Most workers deployed in the projects of Addis Ababa City Government Mega Projects Construction Office were civil engineers with percentages of nearly 81 and the remaining around 19 percent were categorized in others, such as architecture, surveyors, and other disciplines.

Professional Qualification: About 25 percent were working in project manager positions, the same percentage were in the position of resident engineer and the remaining nearly 50 percent were in various positions such as construction engineer, office engineer, architectural engineer, project coordinator, and others.

Unit Type: Around 44 percent of responses were from the contractor, about 28 percent from supervising, 25 percent from the client, and around 3 percent from design.

General Experience: around 47 percent had total experience between 11 to 15 years, nearly 31 percent had above 15 years and the remaining 22 percent had an experience between 5 to 10 years. This showed that more than 65 percent of the workers had a general experience of less than 15 years.

Specific Experience on Megaprojects: about 53 percent of the respondents had experience on megaprojects between 5 to 10 years, around 28 percent had an experience of less than 5 years and nearly 19 percent had between 10 to 15 years. This clearly showed that compared with their general experiences the workers joined the megaprojects after getting some experience on other small-scale projects.

Table 4-1 Demographics of the study respondents

Dimension	Category	Frequency	Percentage
Gender	Male	31	86.1
	Female	5	13.9
Age	18 - 30 years	3	8.3
	31 - 40 years	22	61.1
	41 - 50 years	9	25.0
	Above 51	2	5.6
Education Level	Masters	21	58.3
	Bachelor	15	41.7
Educational Background	Civil Engineering	29	80.6
	Others	7	19.4
Professional Qualification	Project Manager	9	25.0
	Resident Engineer	9	25.0
	Others	18	50.0
Unit Type	Client	9	25.0
	Contractor	16	44.4
	Design	1	2.8
	Supervising	10	27.8
General Experience	5 to 10	8	22.2
	11 to 15	17	47.2
	Above 15	11	30.6
Specific Experience	Below 5	10	27.8
	5 to 10	19	52.8
	11 to15	7	19.4
Project Type	Standard	6	16.7
	High-rise	7	19.4
	Specialized	18	50.0
	Others	5	13.9
Project Complexity	High	21	58.3
	Medium	15	41.7
Project Investment	1 to 3 Billion	26	72.2
	Above 3 Billion	10	27.8
Project Duration	Below 1 year	1	2.8
	1 to 3 years	18	50.0
	3 to 5 years	13	36.1
	Above 5 years	4	11.1

Project Type: about 50 percent of the projects where the respondents worked were specialized types of projects, around 19 percent were high-rise buildings, 18 percent were standard buildings and the remaining 14 percent were other types of projects such as agriculture and manufacturing buildings. Specialized projects were more complex than standard projects, almost half of the projects under Addis Ababa City Government Mega Projects Construction Office had higher complexity.

Project Investment: about 72 percent budget of the projects was in the range of 1 to 3 billion birr and the remaining 28 percent was above 3 billion birr. This showed that all the projects of the Addis Ababa City Government Mega Projects Construction Office are in the range of megaprojects as per the standards set by their regulation.

Project Complexity: all projects under this study fell in the range of high (58 percent) and medium (42 percent) complexity. This data augmented the project type and investment cost described above to distinguish projects on the level of megaprojects.

Project Duration: 50 percent of the project's completion time was between 1 to 3 years, around 36 percent between 3 to 5 years, 11 percent above 5 years and only 3 percent were less than 1 year.

4.4. Descriptive Statistics

The dependent variable in this study was PS, the independent variables were PMLS, which are transformational, transactional, laissez-faire, democratic and authoritarian and the moderating variable was TMS. The mean scores of the dependent, independent, and moderating variables were computed and their values are shown in Table 4-2.

Table 4-2 Descriptive statistics for study variables

	N	Mean	Std. Deviation
Project Success	36	3.83	0.54
Idealized Influence - Attribute	36	3.85	0.66
Idealized Influence - Behavior	36	3.76	0.61
Inspirational Motivation	36	3.57	0.54
Intellectual Stimulation	36	3.64	0.57
Individualized Consideration	36	3.57	0.69
Overall Transformational Leadership	36	3.68	0.58
Contingent Reward	36	3.76	0.86
Management-by-Exception Active	36	3.23	0.78

Management-by-Exception Passive	36	1.90	0.37
Overall Transactional Leadership	36	2.97	0.54
Laissez-faire Leadership	36	1.97	0.72
Democratic Leadership	36	3.48	0.91
Authoritarian Leadership	36	2.98	0.64
Top Management Support	36	3.81	0.59

In this study, descriptive statistics were run for measurements. The table above showed that the PS had a mean value of 3.8316 out of 5 degrees of agreement on the Likert scale. This indicated that the issue of project success in megaprojects need still progress.

Table 4-3 Descriptive statistics of the projects

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Mega Project	36	2.40	4.00	3.4778	.38330
Valid N (listwise)	36				

Likert scale measurement was used to rank projects whether they are in the range of mega projects or not and Table 4-3 above shows the mean value indicating a level of the projects under consideration. A 3.4778 mean value out of 5 degrees of agreement on the Likert scale was identified. Complementing the result with the project type, complexity, and investment demographic data, all projects are regarded at the level of mega projects.

4.5. Correlation Analysis of the Variables

The strength of the relationship between these variables was checked using Karl Pearson's coefficient of correlation.

Table 4-4 shows the correlation between the dependent variable (PS) and all the independent variables. As we can see from the table, there are both positively and negatively correlated predictor variables with the PS.

TL is the most correlated predictor variable to the dependent variable (PS) with a coefficient value of ($R = 0.910$ and $p <= 0.001$). The second positively strongly correlated variable to the dependent variable (PS) is DL with the value of ($R = 0.885$ and $p <= 0.001$).

TrL is positively strongly correlated to the dependent variable with a value of ($R = 0.789$ and $p <= 0.001$) and TMS is the other variable positively strongly correlated to the dependent variable with a value of ($R = 0.952$ and $p <= 0.001$).

The other predictor variable (LL) negatively strongly correlated with the PS with a Pearson correlation coefficient of (R = -0.681 and p <= 0.001)

Authoritarian Leadership (AL) had an insignificant correlation with the PS with a coefficient value of (R = -0.181 and p = 0.291)

Table 4-4 Correlations analysis of each independent variable with PS

Correlations		
Predictor	N = 36	Project Success
Idealized Influence - Attribute	Pearson Correlation Sig (2-tailed)	0.879** < .001
Idealized Influence - Behavior	Pearson Correlation Sig (2-tailed)	0.861** < .001
Inspirational Motivation	Pearson Correlation Sig (2-tailed)	0.820** < .001
Intellectual Stimulation	Pearson Correlation Sig (2-tailed)	0.855** < .001
Individualized Consideration	Pearson Correlation Sig (2-tailed)	0.891** < .001
Transformational Leadership	Pearson Correlation Sig (2-tailed)	0.910** < .001
Contingent Reward	Pearson Correlation Sig (2-tailed)	0.839** < .001
Management-by-Exception Active	Pearson Correlation Sig (2-tailed)	0.692** < .001
Management-by-Exception Passive	Pearson Correlation Sig (2-tailed)	0.028 .870
Transactional Leadership	Pearson Correlation Sig (2-tailed)	0.789** < .001
Laissez-faire Leadership	Pearson Correlation Sig (2-tailed)	-0.681** < .001
Democratic Leadership	Pearson Correlation Sig (2-tailed)	0.885** < .001
Authoritarian Leadership	Pearson Correlation Sig (2-tailed)	-0.181 .291
Top Management Support	Pearson Correlation Sig (2-tailed)	0.952** < .001
**. Correlation is significant at the 0.01 level (2-tailed).		

4.6. Diagnostic Tests of Regression

The data collected to establish the relationship between independent and dependent variables shall be diagnosed for tests of linearity, normality, homoscedasticity, multicollinearity, and autocorrelation whether the data fulfill the assumptions of regression before carrying out full data analysis.

4.6.1. Linearity

Among the assumptions, whether a multiple linear regression model is applied to test a given data is linearity, which is the linear relationship between independent and dependent variables. Just by testing the residuals for homoscedasticity and normality, we can verify the linearity of the data. The normal P-P and scatter plots shown in Appendix – C depict the residuals are normally distributed and homoscedastic, which indicates the linearity assumption is satisfied.

4.6.2. Normality

One of the assumptions in linear regression is determining the normal distribution of the residuals. The normality assumption was done by plotting the histogram and P-P plot for the model (see Appendix – C). Normality criteria are fulfilled if the residual distribution around the center or zero is symmetric and points on the P-P curve are close to the diagonal line. In this case, the histogram showed that the data are normally distributed or symmetric and the points on the P-P curve were close to the diagonal line, indicating that the data fulfilled the assumptions of normality.

4.6.3. Homoscedasticity

One of the central to the linear regression models is homoscedasticity (the same variance), which describes a situation in which the error is the same across all values of the independent variables. A scatter plot diagram is one of the methods to test the assumption. From the scatter plot (Appendix – C), the points are scattered both to the left and right as well as to the top and bottom. This showed the data were homoscedastic.

4.6.4. Autocorrelation

This assumption is used to test whether the residuals are independent or uncorrelated to one another. We use the Durbin-Watson statistic to check the availability of serial correlation among the error terms. The Durbin-Watson statistic value varies from 0 to 4 and a value of 2 indicates no autocorrelation. A value toward zero indicates positive autocorrelation. A value of four indicates negative autocorrelation (Saunders, Lewis, & Thornhill, 2012, p.

524). As you see from Table 4-5 below the Durbin-Wasson value is 1.709 which is close to 2 and indicates no issue of autocorrelation.

Table 4-5 Autocorrelation test

Model Summary[b]		
Model	R	Durbin-Watson
1	.975[a]	1.709

a. Predictors: (Constant), Top Management Support, Authoritarian Leadership, Laissez-Faire Leadership, Transactional Leadership, Transformational Leadership, Democratic Leadership
b. Dependent Variable: Project Success

4.6.5. Multicollinearity

It tests the correlation between two or more independent variables as it affects the separate effect on the dependent variable. We use the tolerance value and its inverse the variance inflation factor (VIF). A very small tolerance value of 0.1 or below and a large value of 10 or above indicates high collinearity (Hair, Black, Babin, & Anderson, 2014). In general, there should not be a perfect correlation between independent (predictor) variables. The VIF values are not greater than 10 and the tolerances are greater than 0.1, indicating that no multicollinearity. VIF and tolerance statistics were computed and the results are shown in Table 4-6 below, where the tolerance value for each independent variable is greater than 0.1 and VIF is less than 10. Therefore, no multicollinearity issue among the study variables.

Table 4-6 Multicollinearity test

Independent Variable		Collinearity Statistics	
		Tolerance	VIF
	Idealized Influence - Attribute	0.153	6.536
	Idealized Influence - Behavior	0.268	3.731
	Inspirational Motivation	0.262	3.817
	Intellectual Stimulation	0.338	2.961
	Individualized Consideration	0.273	3.663
	Contingent Reward	0.212	4.726
	Management-by-Exception Active	0.262	3.822
	Management-by-Exception Passive	0.944	1.059
	Laissez-Faire Leadership	0.493	2.028
	Democratic Leadership	0.190	5.256
	Authoritarian Leadership	0.856	1.169
Dependent Variable: Project Success			

Based on the above-discussed regression assumptions all the required criteria have been fulfilled. Therefore, the researcher moved to analyze the data using multiple regression to check the relationship between independent and dependent variables as well as the moderating variable.

4.7. Multiple Linear Regression Analysis

The relationship between a given dependent variable and one or more independent variables is evaluated and analyzed through regression analysis. The following linear regression models were developed to test the relationship between PMLS and PS.

$$PS = \beta_0 + \beta_1(TL) + \beta_2(TrL) + \beta_3(LL) + \beta_4(DL) + \beta_5(AL) + e_i$$

Where:

PS: Overall Project Success

TL: Transformational Leadership

TrL: Transactional Leadership

LL: Laissez-faire Leadership

DL: Democratic Leadership

AL: Authoritarian Leadership

e_i: The error term

While β_1, β_2, β_3, β_4, and β_5 are coefficients of independent variables

Table 4-7 Model Summary

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.955[a]	.912	.898	.17267
2	.975[b]	.951	.941	.13106
a. Predictors: (Constant), Authoritarian Leadership, Transformational Leadership, Transactional Leadership, Democratic Leadership, Laissez-Faire Leadership				
b. Predictors: (Constant), Authoritarian Leadership, Transformational Leadership, Transactional Leadership, Democratic Leadership, Laissez-Faire Leadership, Top Management Support				
c. Dependent Variable: Project Success				

Table 4-7 shows the relationship between leadership styles (Authoritarian Leadership, Transformational Leadership, Transactional Leadership, Democratic Leadership, Laissez-

Faire Leadership) and project success. The measure of goodness of the dependent variable by the effect of the independent variable is measured using the R square.

Model 1 result showed that the R square value of 0.912 of the project managers' leadership styles jointly explained 91.2 percent of the variation in project success, while the other 8.8 percent is influenced by other variables that are not considered in this study. Thus, the R-squared value is found to be excellent to infer that the fitted regression line is close to all of the data points taken together and the independent variables have more explanatory power in explaining the dependent variable. In addition, the table above indicated the result of model 2 by including the moderating variable "TMS" and whether the support from the top management has an explanatory effect on the project's success. It showed that the TMS increased the percentage of variation in the dependent variable explained together by the independent variables to 95.1 percent.

Table 4-8 ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.310	5	1.862	62.449	.001[b]
	Residual	0.894	30	0.030		
	Total	10.204	35			
2	Regression	9.706	6	1.618	94.172	.001[c]
	Residual	1.498	29	.017		
	Total	10.204	35			
a. Dependent Variable: Project Success						
b. Predictors: (Constant), Authoritarian Leadership, Transformational Leadership, Transactional Leadership, Democratic Leadership, Laissez-Faire Leadership						
c. Predictors: (Constant), Authoritarian Leadership, Transformational Leadership, Transactional Leadership, Democratic Leadership, Laissez-Faire Leadership, Top Management Support						

In Table 4-8 above all the independent variables collectively have a significant effect on the dependent variables were tested using the ANOVA test. The F-test is a statistical test whose purpose is to examine the joint effect of independent variables on the dependent variable.

From Table 4-8 above, model 1 shows the F value is 62.449 at a P-value < 0.05 of significance level that indicates the combined effect of PMLS has a significant impact on the project success in mega building construction projects. Thus, the combined effect of project managers' leadership styles has a significant impact on project success.

Table 4-9 The regression result of the model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.480	.385		3.840	.001
	Transformational Leadership	.487	.097	.526	5.042	.000
	Transactional Leadership	.048	.101	.048	.479	.635
	Laissez-Faire Leadership	-.066	.056	-.088	-1.185	.245
	Democratic Leadership	.216	.069	.362	3.143	.004
	Authoritarian Leadership	-.068	.049	-.080	-1.398	.172
2	(Constant)	.767	.328		2.339	.026
	Transformational Leadership	.277	.085	.299	3.239	.003
	Transactional Leadership	.027	.077	.027	.355	.725
	Laissez-Faire Leadership	-.015	.044	-.020	-.340	.736
	Democratic Leadership	.117	.056	.196	2.082	.046
	Authoritarian Leadership	-.036	.038	-.042	-.947	.352
	Top Management Support	.445	.093	.486	4.803	.000
Dependent Variable: Project Success						

Table 4-9 shows values from the multiple regression analysis for Model - 1. The results depicted the relationship between the independent and dependent variables which may or may not significantly affect their strength. Transformational and democratic leadership styles have statistically positive relationships with project success as the p-values are below the significant level of 0.05 while the remaining independent variables, transactional, laissez-faire, and authoritarian have no significant relationship with the dependent variable, project success, since their p-values are greater than the significance level of 0.05.

In the table above, model 1, β coefficient value of transformational leadership is 0.487 indicating that change in transformational leadership by one can change the project success by 0.487. In addition, a change in democratic leadership by one could change the project success by 0.216 as the β coefficient value of democratic leadership is 0.216.

When we include the TMS variable and test the result in Model - 2 above, the TMS has a positive significant relationship with project success with a p-value of less than the significance level of 0.05 and a beta coefficient of 0.445.

In the table above, model 2, β coefficient value of transformational leadership is 0.277 showing that change in transformational leadership by one can change the project success

by 0.277. A change in democratic leadership by one could change the project success by 0.117 as the β coefficient value of democratic leadership is 0.117. In addition, the top management support β coefficient value is 0.445, and a change by one of top management support could change the project success by 0.445.

At this point, the first two research questions can be addressed.

1. How do project managers' leadership styles affect project success?
2. Which project manager's leadership style is more suitable to deliver building megaprojects to meet the project requirements?

As shown in Table 4-7 above, two models were generated. Results from model 1, show that project managers' leadership styles explained 89.8 percent of the variance in project success while model 2 shows that 94.1 percent of the variance in project success was described by both project managers' leadership styles and top management support. Thus, the adoption of leadership styles commonly transformational and democratic leadership styles leads to a higher level of project success.

Results in Table 4-7 also show that the two models were statistically significant with model 1 reporting a significant F value of 62.449 ($p < 0.05$) and model 2 with a significant F value of 94.172 ($p < 0.05$). Based on the above results, the hypothesis was accepted and there was a statistically significant relationship between project managers' leadership style and project success. Therefore, hypothesis one (H1) is accepted.

There is a positive significant relationship between a project manager's transformational leadership and project success and similarly, a project manager's democratic leadership has a positive significant relationship with project success that answered the first two questions.

Project managers' leadership styles significantly affect the success of building megaprojects in Addis Ababa with the dominating leadership styles of transformational and democratic. Project managers working in megaprojects can adopt either transformational or democratic leadership styles to achieve success in delivering projects. Therefore, project managers' leadership styles can be considered one of the key project success factors that are in line with the works of different scholars (Yang, Wu, Wang, & Chin, 2012; Nguyen, Ogunlana, & Lan, 2004; Belay, Tekeste, & Ambo, 2017; Turner & Muller, 2005; Larsson, Eriksson, Olofsson, & Simonsson, 2015)

Regarding the beta coefficients, transformational leadership has a value of 0.487, the democratic leadership has a value of 0.216. These results show both transformational and democratic leadership play a significant role in achieving project success and the project managers exercised these leadership styles with the dominance of transformational styles which agrees with most research findings (Edwards & Gill, 2012; Blaskovics, 2014; Aga, Noorderhaven, & Vallejo, 2016; Yang, Wu, Wang, & Chin, 2012; Khan, Ali, & Umar, 2019).

4.8. Moderation Analysis

The moderating impact of one variable on the relationship between the independent and dependent variables is checked using multiple regression analysis. Baron and Kenny's (1986) approach was used to test the main effect and the interaction term to evaluate the moderating effect. The interaction term was computed as a product of TMS and the respective PMLS scores. To reduce the risk of multicollinearity, TMS and respective PMLS scores were converted into standardized scores (Z-score values) that have mean zero and standard deviation one before computation of the interaction term.

Hierarchical multiple regression analysis was used to determine the moderating effect of the top management support on the relationship between project managers' leadership style and project success and the results are shown below.

As shown in Table 4-10, model 1, shows that 93.2 percent of the variance in PS was explained by TL and TMS. The results show that the model was statistically significant with a significance p-value of less than 0.05. Model 2 shows that 93.9 percent of the variance in PS was explained by TL, TMS, and the interaction term (TL*TMS) and was statistically significant with a significant F value of 4.903 ($p < 0.05$). Therefore, the inclusion of the interaction term in the model resulted in an increase of adjusted R^2 by 0.007 (0.939 – 0.932).

In the table below, additional findings show that for model 1 the significant predictors of PS were both TMS ($\beta = 0.600$ and $p < 0.05$) and TL ($\beta = 0.316$ and $p < 0.05$). For model 2, the results indicate that the significant predictors of PS were TL ($\beta = 0.296$ and $p < 0.05$), TMS ($\beta = 0.584$ and $p < 0.05$), and the interaction term ($\beta = -0.44$ and $p < 0.05$). Thus, since the interaction term was statistically significant ($p < 0.05$), top management support has a moderating effect on the relationship between transformational leadership and project success (Hypothesis 2 is accepted).

Table 4-10 Regression result of PS on TL, TMS, and the interaction term (TL*TMS)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.383	.159		2.403	.022
	Transformational Leadership	.316	.082	.342	3.848	.001
	Top Management Support	.600	.081	.656	7.390	.000
2	(Constant)	.556	.170		3.275	.003
	Transformational Leadership	.296	.078	.320	3.785	.001
	Top Management Support	.584	.077	.638	7.567	.000
	Interaction TL*TMS	-.044	.020	-.100	-2.214	.034
a. Dependent Variable: Project Success						

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.967[a]	.936	.932	.14113	.936	239.659	2	33	.000
2	.972[b]	.944	.939	.13346	.009	4.903	1	32	.034
a. Predictors: (Constant), Top Management Support, Transformational Leadership									
b. Predictors: (Constant), Top Management Support, Transformational Leadership, Interaction TL*TMS									

Table 4-11 shows that in model 1, 91.3 percent of the variance in PS was explained by TrL and TMS. The results show that the model was statistically significant with a significance p-value of less than 0.05. Model 2 shows that 92.5 percent of the variance in PS was explained by TrL, TMS, and the interaction term (TrL*TMS) and was statistically significant with a significant F value of 6.183 ($p < 0.05$). Therefore, the inclusion of the interaction term in the model resulted in an increase of adjusted R^2 by 0.012 (0.925 – 0.913).

In the table below, additional findings show that for model 1 the significant predictors of PS were both TMS ($\beta = 0.758$ and $p < 0.05$) and TrL ($\beta = 0.116$ and $p < 0.05$). For model 2, the results indicate that the significant predictors of PS were TrL ($\beta = 0.205$ and $p < 0.05$), TMS ($\beta = 0.703$ and $p < 0.05$), and the interaction term ($\beta = -0.070$ and $p < 0.05$). Thus, since the interaction term was statistically significant ($p< 0.05$), top management support has a

moderating effect on the relationship between transactional leadership and project success (Hypothesis 3 is accepted).

Table 4-11 Regression result of PS on TrL, TMS, and the interaction term (TrL*TMS)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.454	.178		2.555	.015
	Transactional Leadership	.166	.076	.164	2.170	.037
	Top Management Support	.758	.069	.828	10.944	.000
2	(Constant)	.597	.175		3.414	.002
	Transactional Leadership	.205	.073	.204	2.825	.008
	Top Management Support	.703	.068	.768	10.320	.000
	Interaction TrL*TMS	-.070	.028	-.122	-2.487	.018
a. Dependent Variable: Project Success						

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.958[a]	.918	.913	.15890	.918	185.556	2	33	.000
2	.965[b]	.932	.925	.14773	.013	6.183	1	32	.018
a. Predictors: (Constant), Top Management Support, Transactional Leadership									
b. Predictors: (Constant), Top Management Support, Transactional Leadership, Interaction TrL*TMS									

The moderating effect of TMS on the relationship between LL and PS was conducted and the results are shown in Table 4-12. The findings indicate for model 1, 90.3 percent of the variance in PS was explained by LL and TMS and shows that model 1 was statistically significant with an F value of 164.457 ($p < 0.05$). Thus, the inclusion of the interaction term in the model resulted in an increase of adjusted R^2 by 0.005 (0.908 – 0.903). Model 2 results show that 90.8 percent of the variance in PS was explained by LL, TMS, and the interaction term (LL*TMS). In addition, model 2 was not statistically significant with an F value of 2.868 ($p > 0.05$).

The findings in Table 4-12 below also indicate that for model 1, the significant predictor of PS was TMS ($\beta = 0.832$ and $p < 0.05$) while LL ($\beta = -0.047$ and $p > 0.05$) was not a

significant predictor. For model 2, the results indicate that the significant predictor of PS was only TMS (β = 0.830 and p < 0.05), while LL (β = -0.018 and p > 0.05) and the interaction term (β = 0.049 and p > 0.05) were not significant predictors. Thus, since the interaction term was not statistically significant (p > 0.05), top management support does not have a moderating effect on the relationship between laissez-faire leadership and project success (Hypothesis 4 is rejected).

Table 4-12 Regression result of PS on LL, TMS, and the interaction term (LL*TMS)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.756	.332		2.274	.030
	Laissez-Faire Leadership	-.047	.054	-.063	-.878	.386
	Top Management Support	.832	.066	.909	12.689	.000
2	(Constant)	.738	.324		2.282	.029
	Laissez-Faire Leadership	-.018	.055	-.024	-.331	.743
	Top Management Support	.830	.064	.907	13.011	.000
	Interaction LL*TMS	.049	.029	.095	1.694	.100
a. Dependent Variable: Project Success						

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.953[a]	.909	.903	.16791	.909	164.457	2	33	.000
2	.957[b]	.916	.908	.16335	.008	2.868	1	32	.100
a. Predictors: (Constant), Top Management Support, Laissez-Faire Leadership									
b. Predictors: (Constant), Top Management Support, Laissez-Faire Leadership, Interaction LL*TMS									

To determine the moderating role of TMS on the relationship between DL and PS, hierarchical multiple linear regression analysis was conducted and the results are shown in Table 4-13 below. In model 1, 92.6 percent of the variance in PS was explained by DL and TMS, and the results show that the model was statistically significant with a significant F value of 219.981 (p < 0.05). Model 2 shows that 93.5 percent of the variance in PS was explained by DL, TMS, and the interaction term (DL*TMS). Thus introducing the interaction term in the model resulted in an increase in adjusted R2 by 0.009 (0.935 – 0.926).

In addition, model 2 was also statistically significant with a significant F value of 5.584 ($p < 0.05$).

In Table 4-13 below, additional findings show that for model 1 significant predictors of PS were both DL ($\beta = 0.170$ and $p < 0.05$) and TMS ($\beta = 0.652$ and $p < 0.05$). For model 2, the results indicate that the significant predictors of PS were DL ($\beta = 0.165$ and $p < 0.05$), TMS ($\beta = 0.631$ and $p < 0.05$), and the interaction term ($\beta = -0.063$ and $p < 0.05$). Thus, since the interaction term was statistically significant ($p < 0.05$), top management support has a moderating effect on the relationship between democratic and project success (Hypothesis 5 is accepted).

Table 4-13 Regression result of PS on DL, TMS, and the interaction term (DL*TMS)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.759	.178		4.264	.000
	Democratic Leadership	.170	.051	.285	3.337	.002
	Top Management Support	.652	.078	.712	8.351	.000
2	(Constant)	.906	.178		5.090	.000
	Democratic Leadership	.165	.048	.276	3.454	.002
	Top Management Support	.631	.074	.690	8.570	.000
	Interaction DL*TMS	-.063	.027	-.106	-2.363	.024
a. Dependent Variable: Project Success						

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.964[a]	.930	.926	.14688	.930	219.981	2	33	.000
2	.970[b]	.941	.935	.13764	.010	5.584	1	32	.024
a. Predictors: (Constant), Top Management Support, Democratic Leadership									
b. Predictors: (Constant), Top Management Support, Democratic Leadership, Interaction DL*TMS									

Table 4-14 below shows the regression result for the moderating effect of TMS in the relationship between AL and PS and the interaction term. As shown in the table, model 1 indicates that 90.1 percent of the variance in PS was explained by AL and TMS, and the

results show that the model was statistically significant with a significant F value of 160.513 ($p < 0.05$). Model 2 shows that 89.9 percent of the variance in PS was explained by AL, TMS, and the interaction term (AL*TMS). Thus, the inclusion of the interaction term in the model resulted in a reduction of adjusted R^2 by 0.002 (0.901 – 0.899). In addition, model 2 was not statistically significant with an F value of .231 ($p > 0.05$).

The findings in Table 4-14 below also indicate that for model 1, the significant predictor of PS was TMS ($\beta = 0.869$ and $p < 0.05$) while AL ($\beta = -0.009$ and $p > 0.05$) was not a significant predictor. For model 2, the results indicate that the significant predictor of PS was only TMS ($\beta = 0.870$ and $p < 0.05$), while AL ($\beta = -0.007$ and $p > 0.05$) and the interaction term ($\beta = 0.013$ and $p > 0.05$) were not significant predictors. Thus, since the interaction term was not statistically significant ($p > 0.05$), top management support does not have a moderating effect on the relationship between authoritarian leadership and project success (Hypothesis 6 is rejected).

Table 4-14 Regression result of PS on AL, TMS, and the interaction term (AL*TMS)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.545	.253		2.153	.039
	Authoritarian Leadership	-.009	.046	-.010	-.186	.853
	Top Management Support	.869	.049	.950	17.590	.000
2	(Constant)	.543	.256		2.118	.042
	Authoritarian Leadership	-.007	.046	-.009	-.157	.876
	Top Management Support	.870	.050	.951	17.389	.000
	Interaction AL*TMS	.013	.027	.026	.480	.634
a. Dependent Variable: Project Success						

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.952[a]	.907	.901	.16977	.907	160.513	2	33	.000
2	.953[b]	.907	.899	.17179	.001	.231	1	32	.634
a. Predictors: (Constant), Top Management Support, Authoritarian Leadership									
b. Predictors: (Constant), Top Management Support, Authoritarian Leadership, Interaction AL*TMS									

The objective of this section is to examine the moderating effect of top management support on the relationship between project managers' leadership styles (transformational, transactional, laissez-faire, democratic, and authoritarian) and project success in Addis Ababa City Government mega projects. Accordingly, the first moderation test was done for the transformational leadership style and the result of the study showed that top management support had a moderating role in the relationship between transformational leadership and project success which was supported by the works of Fareed, et al., (2023) who found the moderating effect of top management support in Pakistan's public projects.

More specifically transformational leadership was the highly rated leadership style by the respondents and it shows that the project managers in mega projects of Addis Ababa City Government have the qualities of motivating, aspiring, and developing the project team and have a clear shared vision.

The second moderation test was the top management support role on the relationship between transactional leadership style and project success. The result shows that top management support had a moderating impact on their relationship even if transactional leadership had no significant relationship with project success. It is considered that the insignificant value was due to the very low rate of the management by exception (passive) dimension of the transactional leadership.

The third construct tested for moderation was the relationship between laissez-faire leadership style and project success. The result showed that the laissez-faire leadership style in Addis Ababa mega projects produced a negative impact. This leadership style does not have a positive role in project success and the top management support moderation has no impact in their relationship.

The fourth moderation test was on the relationship between democratic leadership style and project success. Democratic leadership was the second most highly rated by the respondents to have a significant effect on Addis Ababa mega projects. Top management support also moderates its relationship with the project's success.

The last moderated variable was the relationship between authoritarian leadership style and project success. In Addis Ababa mega projects authoritarian leadership was considered the least leadership style adopted by the project managers. The moderating effect of top

management support on the relationship between authoritarian leadership style and project success was insignificant.

Finally, Addis Ababa City Government mega projects have been dominated by project managers who exhibited transformational and democratic leadership styles. Top management support both from the contractor and the client has a high impact on the leadership styles of the project managers to deliver the mega projects on scheduled time, within the budget, to the required level of specification, and to satisfy all the stakeholders.

Table 4-15 Summary of hypotheses findings

S.N.	Hypothesis	Result	Decision
1	**H1:** The joint effect of project managers' leadership style significantly affects project success.	($F = 62.449$, $p < 0.05$)	Accepted
2	**H2:** Top management support moderates the relationship between transformational leadership style and project success.	($\beta = -.44$, $p < 0.05$)	Accepted
3	**H3:** Top management support moderates the relationship between transactional leadership style and project success.	($\beta = -.07$, $p < 0.05$)	Accepted
4	**H4:** Top management support moderates the relationship between laissez-faire leadership style and project success.	($\beta = .049$, $p > 0.05$)	Rejected
5	**H5:** Top management support moderates the relationship between democratic leadership style and project success.	($\beta = -.063$, $p < 0.05$)	Accepted
6	**H6:** Top management support moderates the relationship between authoritarian leadership style and project success.	($\beta = 0.013$, $p > 0.05$)	Rejected

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary

The overall objective of this study was to assess the relationship between project managers' leadership styles and project success with the moderating effect of top management support in building megaprojects solely run under the Addis Ababa City Government Mega Projects Construction Office. To achieve the objective of the research, a descriptive and explanatory cross-sectional research design was used to collect primary data. Primary data was collected from project managers, resident engineers, client representatives, and one purposively selected contractor staff who had been involved in the eleven (11) projects owned by the Addis Ababa City Government Mega Projects Construction Office. The study achieved a response rate of 81.82 percent.

The projects under the office had different characteristics in terms of size, type, and complexity. For instance, in terms of project cost, all projects had a budget of greater than one billion ETB, nearly 72 percent of the projects had a budget of between one and three billion ETB and the remaining 28 percent had greater than 3 billion ETB. In addition, 50 percent of the projects had specialized types of projects, 19 percent were high-rise projects and the remaining were standard and other types of projects. When we dealt with the complexity of the projects all the buildings were in the range of high and medium complexity with 58 and 42 percent respectively.

The first hypothesis evaluated the relationship between project managers' leadership styles and project success in mega-building projects of the Addis Ababa City Government Mega Projects Construction Office. The study found a statistically significant relationship between PMLS and project success. Transformational and democratic leadership were the dominating leadership styles in the building megaprojects of the Addis Ababa City Government. However, no statistical relationship between laissez-faire, transactional, and authoritarian leadership styles and project success of mega projects.

In hypothesis two, the moderation role of top management support in the relationship between transformational leadership style and project success was evaluated. The results of the study found a statistically significant moderation impact of top management support in the relationship between transformational leadership style and project success. In addition,

hypotheses three to six evaluated the moderating role of top management support in the relationship between PMLS (transactional, laissez-faire, democratic, and authoritarian leadership styles) and project success. The results of the study showed top management support moderated the relationship between PMLS (transactional and democratic) and project success. On the other hand, the relationship between PMLS (laissez-faire and authoritarian) and project success was not moderated by the top management support.

5.2. Conclusion

The overall objective of this study was to determine the relationship between project managers' leadership style (PMLS) and project success (PS) with the moderating role of top management support (TMS) in public building construction megaprojects that are run under the administration of the Addis Ababa City Government Mega Projects Construction Office (AACGMPCO). The study findings showed the overall project managers' leadership styles affect project success of Addis Ababa City building mega projects. In addition, transformational leadership (TL) and democratic leadership (DL) had a strong positive relationship with project success (PS). It was specifically found that those project managers exhibited both transformational leadership (TL) and democratic leadership (DL) with transformational leadership (TL) being the dominant attain success in leading projects. However, transactional leadership (TrL), laissez-faire leadership (LL), and authoritarian leadership (AL) show an insignificant relationship with project success (PS). Therefore, it can be concluded that PMLS is one of the major PSFs that has a significant role in delivering projects successfully.

In addition, top management support (TMS) has the role of strengthening the relationship between project managers' leadership styles (transformational, transactional, and democratic leadership) and project success (PS). This shows that the project manager who exhibits the mentioned leadership styles increases the probability of project success when supported by higher management. However, top management support did not have a significant impact on the relationship between PMLS (laissez-faire and authoritarian leadership) and project success. Thus, project managers need to adopt transformational and democratic leadership styles to increase the successful completion of building megaprojects in Ethiopia and support from top management is also very critical while the managers exercise these leadership styles.

5.3. Recommendation

The following recommendations are forwarded based on the research findings of the study.

Practical Implications

- Contractors participating in the construction of building megaprojects should take into account leadership competency and styles when recruiting and assigning project managers to their projects.
- Project owners, contractors, and project management training institutions need to focus not only on the technical and management skills of their workers especially the project managers, but also on the development of their leadership skills.
- Project managers progressing from a junior level to middle and then to a senior level need to exercise different leadership styles, particularly developing a transformational leadership style is mandatory.
- The top management should develop training programs and workshops for a project team and operationalize transformational leadership by raising awareness.
- Construction firms' top management should give close attention to and support projects while the project manager enhances its leadership styles.
- Multi-dimensions of top management support should be taken into account by the project managers during the implementation of projects. However, senior management and project managers should be aware that multiple dimensions of top management support may not be equal drivers to enhance the likelihood of project success.

Theoretical Implications

- In the literature on project management, there has not been a consensus on the relationship between project managers' leadership style and project success. In addition, most of the existing literature has been limited to developed countries and information system projects. Therefore, this study contributed to the project management literature, by confirming a significant relationship between the project manager's leadership style and project success in construction projects in developing countries.
- The likelihood of a project's success increases if the project manager has a set of leadership competencies and skills.

5.4. Limitations of the Study

The study had some limitations;

Firstly, the study was conducted only on building megaprojects under the ownership of the Addis Ababa City Government Mega Projects Construction Office, which limits the generalizability of the study findings to other types of projects.

Secondly, the study was carried out on public building megaprojects, it could not consider other types of mega projects such as infrastructures, roads, hydropower, and dams. In addition, private building projects such as high-rise, commercial, and industrial were not included.

Thirdly, project success was based on the objective measure of time, cost, quality, and stakeholder satisfaction. Other dimensions of the dependent variable could not be considered.

Finally, the study did not consider the qualitative measure of project success which probably could have resulted in a different model.

5.5. Suggestion for Further Research

Depending on the study findings and limitations, the following possible research areas are suggested.

Since the study used only building megaprojects in Addis Ababa City Government, there is a possibility of expanding the research either into all megaprojects in Addis Ababa or to building megaprojects all over the country.

It seems that there are other dimensions of project success such as safety, environment performance, client satisfaction, and profitability to be incorporated into to dependent variable for comprehensive further research.

Further research can be also conducted by adding the mediating effect of team building and replacing top management support with project characteristics.

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APPENDICES

Appendix – A: PM Questionnaire

QUESTIONNAIRE

Addis Ababa University
College of Business and Economics
Department of Management
EMBA Program

Dear Sir/Madam

This questionnaire is designed to collect relevant data for my research project entitled "***The Moderating Effect of Top Management Support in Relationship between Project Managers' Leadership Styles and Project Success: In the Case of Building Megaprojects in Addis Ababa.***"

It is designed to explore and find out the relationship between project managers' leadership styles and mega construction projects' success in terms of the 'iron triangle' and project stakeholder satisfaction in the moderating effect of top management support.

Thus, the researcher kindly requests the utmost attention and collaboration of all concerned persons who are selected to fill out this questionnaire by providing reliable and genuine information that could help to reach the right research outcome and conclusion. The data that you will provide is very important for the achievement of the research objectives. Therefore, I kindly request your genuine and honest responses. As a matter of ethical research, I solemnly commit that your response will be kept confidential and will be used only for research purposes.

Thank you so much in advance.

Address
Lelisa Markos (EMBA Student, AAU)
Email: lelimark@gmail.com
Tel.: +251-913245737

PART I: GENERAL INFORMATION

a. Respondents Information

1. Name of your employer: _____
2. Gender: ☐ Male ☐ Female
3. Age (years): ☐ 18 – 30 ☐ 31 – 40 ☐ 41 – 50 ☐ Above 51
4. Highest level of professional education:

   ☐ PhD ☐ Master ☐ Bachelor ☐ Diploma ☐ Certificate ☐ High School
5. Educational background: _____
6. Professional qualification:

   ☐ Senior Executives ☐ Project Manager ☐ Department Manager

   ☐ Resident Engineer ☐ Other, specify _____
7. Unit type:

   ☐ Client ☐ Contractor ☐ Design ☐ Supervising ☐ Other_____
8. General years of experience in construction project work.

   ☐ < 5 ☐ 5 – 10 ☐ 11 – 15 ☐ > 15
9. Specific years of experience in construction megaprojects.

   ☐ < 5 ☐ 5 – 10 ☐ 11 – 15 ☐ > 15

b. Project Information

1. Project type: ☐ Standard building ☐ High-rise building

   ☐ Specialized building ☐ Other; Specify _____
2. Complexity of the project: ☐ High ☐ Medium ☐ Low
3. Project investment/budget (in Birr):

   ☐ < 500 Million ☐ 500 Million – 1 Billion ☐ 1 – 3 Billion ☐ > 3 Billion
4. Project duration (in years):

   ☐ < 1 year ☐ 1 – 3 years ☐ 3 – 5 years ☐ > 5 years

PROJECT MANAGER'S QUESTIONNAIRE

This questionnaire is to describe your leadership style as you recognize it. Please answer all items on this answer sheet by putting a tick (✓) in the appropriate response. If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank.

Use the following rating scale:

Not at all	Rarely	Sometimes	Fairly often	Frequently
1	2	3	4	5

PART II: PROJECT MANAGER'S LEADERSHIP STYLES

TRASFORMATIONAL LEADERSHIP		1	2	3	4	5
	Idealized Influence Attribute					
1	I go beyond self-interest for the good of the project team.					
2	I build respect by my actions.					
3	I instill pride in project team members being associated with me.					
4	I display a sense of power and confidence.					
	Idealized Influence Behavior					
5	I emphasize the importance of having a collective sense of mission.					
6	I consider the moral and ethical consequences of decisions.					
7	I specify the importance of having a strong sense of purpose.					
8	I talk about my most important values and beliefs.					
	Inspirational Motivation					
9	I talk optimistically about the future.					
10	I articulate a compelling vision of the future.					
11	I talk enthusiastically about what needs to be accomplished.					
12	I express confidence that goals will be achieved.					
	Intellectual Stimulation					
13	I re-examine the appropriateness of critical project assumptions.					
14	I seek differing perspectives when solving problems.					
15	I get others to look at problems from many different angles.					
16	I suggest new ways of looking at how to complete project assignments.					
	Individualized Consideration					
17	I consider an individual as having different needs, abilities, and aspirations from others.					
18	I help others to develop their strengths					
19	I treat project team members as an individual rather than just a member of the team.					
20	I spend time teaching and coaching project team members.					

TRANSACTIONAL LEADERSHIP		1	2	3	4	5
	Contingent Reward					
21	I tell project team members what to do to be rewarded for their efforts.					
22	I make clear what each project member can expect to receive when project goals are achieved.					
23	I express satisfaction when others meet expectations.					
24	I discuss in specific terms with the project team who is rewarded for achieving performance targets.					
	Management-by-exception (Active)					
25	I keep track of all mistakes within the project.					
26	I focus attention on dealing with mistakes, complaints, and deviations from the standards.					
27	I search for mistakes before commenting on performance.					
28	I direct my attention toward failures to meet project standards.					
	Management-by-exception (Passive)					
29	I failed to interfere until problems became serious on the project.					
30	I wait for things to go wrong before taking action.					
31	I show that I am a firm believer in “things should only be changed if they are wrong”.					
32	I demonstrate that problems must become chronic before I take action.					

LAISSEZ-FAIRE LEADERSHIP		1	2	3	4	5
33	I avoid getting involved when important issues arise.					
34	I am absent when needed.					
35	I avoid making decisions.					
36	I delay responding to urgent questions.					

DEMOCRATIC LEADERSHIP		1	2	3	4	5
37	Employees desire to be involved in decision-making.					
38	I provide directions without pressure on others as the key to being a good leader.					
39	I provide frequent and supportive communication for the project team members.					
40	I assist subordinates in taking ownership of their tasks.					
41	It is my responsibility to help subordinates in finding their passion.					
42	People are basically competent and if given a task will do a good job.					

AUTHORITARIAN LEADERSHIP		1	2	3	4	5
43	I supervise employees closely otherwise they are not able to do their job.					
44	It is reasonable to argue that the majority of employees are lazy.					
45	Most employees feel insecure and need direction in their jobs.					
46	I provide rewards or punishments to motivate employees to achieve project objectives.					
47	I am the chief judge for the achievement of the members of the group.					
48	I give orders and clarify procedures to workers as an effective leader.					

PART III: TOP MANAGEMENT SUPPORT

TMS Measurement Items		1	2	3	4	5
1	Top management has a clear strategy for the implementation of the project.					
2	The top management often emphasizes the importance of the project.					
3	The top management plays an important role in defining project scope.					
4	The top management allocates both financial and non-financial resources for the project.					
5	Top management delegates necessary power to the project leaders and project team.					
6	The top management is supportive of the effort to improve the construction projects and their performance.					
7	The top management guides the project managers to lead the project successfully.					
8	Senior management supports in decision-making.					

PART IV: PROJECT SUCCESS

Project Success Measurement Items		1	2	3	4	5
1	The project is on track or completed on time.					
2	The project is completed with the allocated budget.					
3	There is no cost overrun or expected cost increment of the project.					
4	The scope of all project works completed.					
5	The project was taken over upon the company's overall standards.					
6	The outcomes of the project are used by its client/owner.					
7	The project client/owner is satisfied.					
8	Your employer is satisfied with the outcome of the project implementation.					
9	The Project team members are satisfied with the process by which the project is implemented.					

PART V: CONSTRUCTION MEGAPROJECTS

This questionnaire is to categorize whether the selected project is at the level of a megaproject or not. Please answer all items on this answer sheet by putting a tick (✓) in the appropriate response. If an item is s irrelevant, or if you are unsure or do not know the answer, leave the answer blank.

Use the following rating scale:

Not at all	Low	Moderate	High	Very high
1	2	3	4	5

Megaprojects Measurement Items		1	2	3	4	5
1	To what extent does each element of the project drive the overall cost?					
2	What is the level of intensity for each of the potential complexities?					
3	What is the level of uncertainty or risk for each potential element?					
4	How strongly are each of the potential ideals held for the project?					
5	To what extent does each factor contribute to the overall visibility of the project?					

PART VI: Any comments that are helpful for the questionnaire

_____

_____

_____

_____

_____

_____

~ ~ ~ ~ ~ 'Thank you very much for your time and effort!' ~ ~ ~ ~ ~

Appendix – B: Rater Questionnaire

QUESTIONNAIRE

Addis Ababa University
College of Business and Economics
Department of Management
EMBA Program

Dear Sir/Madam

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Thus, the researcher kindly requests the utmost attention and collaboration of all concerned persons who are selected to fill out this questionnaire by providing reliable and genuine information that could help to reach the right research outcome and conclusion. The data that you will provide is very important for the achievement of the research objectives. Therefore, I kindly request your genuine and honest responses. As a matter of ethical research, I solemnly commit that your response will be kept confidential and it will be used only for research purposes.

Thank you so much in advance.

Address
Lelisa Markos (EMBA Student, AAU)
Email: lelimark@gmail.com
Tel.: +251-913245737

PART I: GENERAL INFORMATION

a. Respondents Information

1. Name of your employer: _____
2. Gender: ☐ Male ☐ Female
3. Age (years): ☐ 18 – 30 ☐ 31 – 40 ☐ 41 – 50 ☐ Above 51
4. Highest level of professional education:

   ☐ PhD ☐ Master ☐ Bachelor ☐ Diploma ☐ Certificate ☐ High School
5. Educational background: _____
6. Professional qualification:

   ☐ Senior executives ☐ Project Manager ☐ Department Manager

   ☐ Resident Engineer ☐ Other, specify _____
7. Unit type:

   ☐ Client ☐ Contractor ☐ Design ☐ Supervising ☐ Other_____
8. General years of experience in construction project work.

   ☐ < 5 ☐ 5 – 10 ☐ 11 – 15 ☐ > 15
9. Specific years of experience in construction megaprojects.

   ☐ < 5 ☐ 5 – 10 ☐ 11 – 15 ☐ > 15

b. Project Information

1. Project type: ☐ Standard building ☐ High-rise building

   ☐ Specialized building ☐ Other; Specify _____
2. Complexity of the project: ☐ High ☐ Medium ☐ Low
3. Project investment/budget (in Birr):

   ☐ < 500 Million ☐ 500 Million – 1 Billion ☐ 1 – 3 Billion ☐ > 3 Billion
4. Project duration (in years):

   ☐ < 1 year ☐ 1 – 3 years ☐ 3 – 5 years ☐ > 5 years

RATER (TEAM MEMBERS & OTHERS) QUESTIONNAIRE

Name of the Project:_____

This questionnaire is to describe the leadership style of the project manager of the above-mentioned project as you perceive it. Please answer all items on this answer sheet by putting a tick (✓) in the appropriate response. If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank. Please answer this questionnaire anonymously.

IMPORTANT (necessary for processing): Which best describes you?

___ I am at a higher organizational level than the person I am rating.

___ The person I am rating is at my organizational level.

___ I am at a lower organizational level than the person I am rating.

___ I do not wish my organizational level to be known.

Use the following rating scale:

Not at all	Rarely	Sometimes	Fairly often	Frequently
1	2	3	4	5

PART II: PROJECT MANAGER LEADERSHIP STYLES

TRASFORMATIONAL LEADERSHIP		1	2	3	4	5
	Idealized Influence Attribute					
1	Goes beyond his/her self-interest for the good of the project team.					
2	Builds respect by his/her actions.					
3	Instills pride in project team members being associated with him/her.					
4	Displays a sense of power and confidence.					
	Idealized Influence Behavior					
5	Emphasizes the importance of having a collective sense of mission.					
6	Considers the moral and ethical consequences of decisions.					
7	Specifies the importance of having a strong sense of purpose.					
8	Talks about his/her most important values and beliefs.					
	Inspirational Motivation					
9	Talks optimistically about the future.					
10	Articulates a compelling vision of the future.					
11	Talks enthusiastically about what needs to be accomplished.					
12	Expresses confidence that goals will be achieved.					
	Intellectual Stimulation					
13	Re-examines appropriateness of critical project assumptions.					

TRASFORMATIONAL LEADERSHIP		1	2	3	4	5
14	Seeks differing perspectives when solving problems.					
15	Gets others to look at problems from many different angles.					
16	Suggests new ways of looking at how to complete project assignments.					
	Individualized Consideration					
17	Considers an individual as having different needs, abilities, and aspirations from others.					
18	Helps others to develop their strengths.					
19	Treats project team members as an individual rather than just a member of the team.					
20	Spends time teaching and coaching project team members.					

TRANSACTIONAL LEADERSHIP		1	2	3	4	5
	Contingent Reward					
21	Tells project team members what to do to be rewarded for their effort.					
22	Makes clear what each project member can expect to receive when project goals are achieved.					
23	Expresses satisfaction when others meet expectations.					
24	Discusses in specific terms with the project team who is rewarded for achieving performance targets.					
	Management-by-exception (Active)					
25	Keeps track of all mistakes within the project.					
26	Focuses attention on dealing with mistakes, complaints, and deviations from the standards.					
27	Searches for mistakes before commenting on performance.					
28	Directs his/her attention toward failures to meet project standards.					
	Management-by-exception (Passive)					
29	Fails to interfere until problems become serious on project.					
30	Waits for things to go wrong before taking action.					
31	Shows that he/she is a firm believer in “things should only be changed if they are wrong.”					
32	Demonstrates that problems must become chronic before taking action.					

LAISSEZ-FAIRE LEADERSHIP		1	2	3	4	5
33	Avoids getting involved when important issues arise.					
34	Is absent when needed.					
35	Avoids making decisions.					
36	Delays responding to urgent questions.					

DEMOCRATIC LEADERSHIP		1	2	3	4	5
37	Employees desire to be involved in decision-making.					

38	Provides direction without pressure on others.					
39	Most workers want frequent and supportive communication from their leaders.					
40	Assists subordinates or project teams in taking ownership of their tasks.					
41	Helps subordinates or project teams in finding their passion.					
42	People are basically competent and if given a task will do a good job.					

AUTHORITARIAN LEADERSHIP		1	2	3	4	5
43	Employees need to be supervised closely otherwise they are not able to do their job.					
44	It is reasonable to argue that the majority of employees are lazy.					
45	Most employees feel insecure and need direction in their jobs.					
46	Employees must be given rewards or punishments to motivate them to achieve project objectives.					
47	The leader is the chief judge for the achievement of the members of the group.					
48	Effective leaders give orders and clarify procedures.					

PART III: TOP MANAGEMENT SUPPORT

TMS Measurement Items		1	2	3	4	5
1	Top management has a clear strategy for the implementation of the project.					
2	The top management often emphasizes the importance of the project.					
3	The top management plays an important role in defining project scope.					
4	The top management allocates both financial and non-financial resources for the project.					
5	Top management delegates necessary power to the project leaders and project team.					
6	The top management is supportive of the effort to improve the construction projects and their performance.					
7	The top management provides guidance to the project managers to lead the project successfully.					
8	Senior management supports in decision-making.					

PART IV: PROJECT SUCCESS

Project Success Measurement Items		1	2	3	4	5
1	The project is on track or completed on time.					
2	The project is completed with the allocated budget.					
3	There is no cost overrun or expected cost increment of the project.					
4	The scope of all project works completed.					

5	The project was taken over upon the company's overall standards.					
6	The outcomes of the project are used by its client/owner.					
7	The project client/owner is satisfied.					
8	Your employer is satisfied with the outcome of the project implementation.					
9	The Project team members are satisfied with the process by which the project is implemented.					

PART V: CONSTRUCTION MEGAPROJECTS

This questionnaire is to categorize whether the selected project is at the level of megaproject or not. Please answer all items on this answer sheet by putting a tick (✓) in the appropriate response. If an item is s irrelevant, or if you are unsure or do not know the answer, leave the answer blank.

Use the following rating scale:

Not at all	Low	Moderate	High	Very high
1	2	3	4	5

Megaprojects Measurement Items		1	2	3	4	5
1	To what extent does each element of the project drive the overall cost?					
2	What is the level of intensity for each of the potential complexities?					
3	What is the level of uncertainty or risk for each potential element?					
4	How strongly are each of the potential ideals held for the project?					
5	To what extent does each factor contribute to the overall visibility of the project?					

PART V: Any comments that are helpful for the questionnaire:

_____

_____

_____

_____

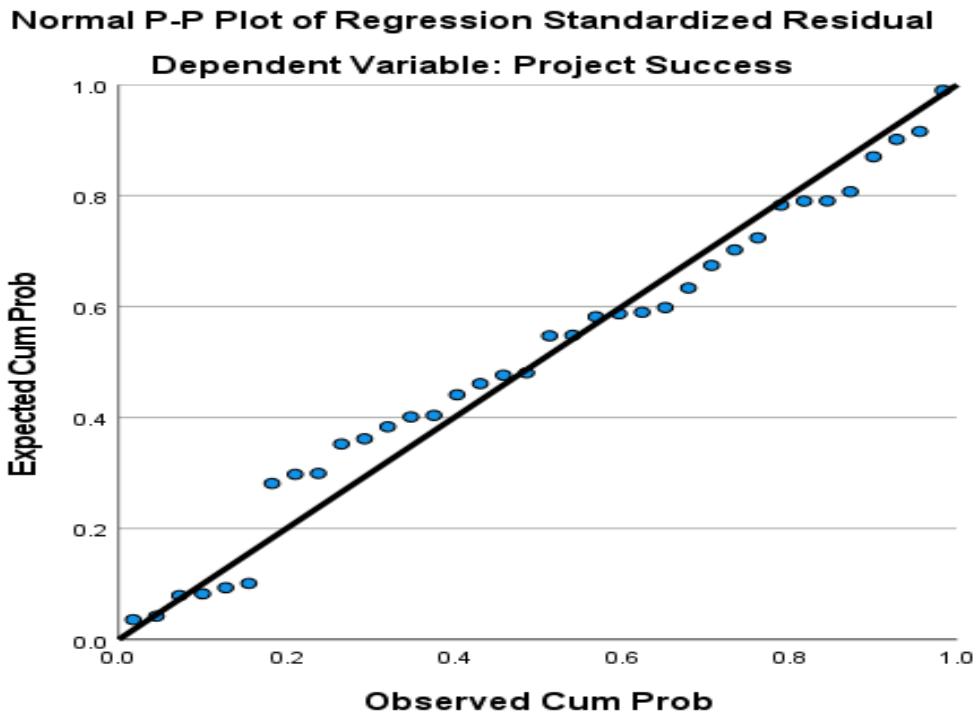
_____

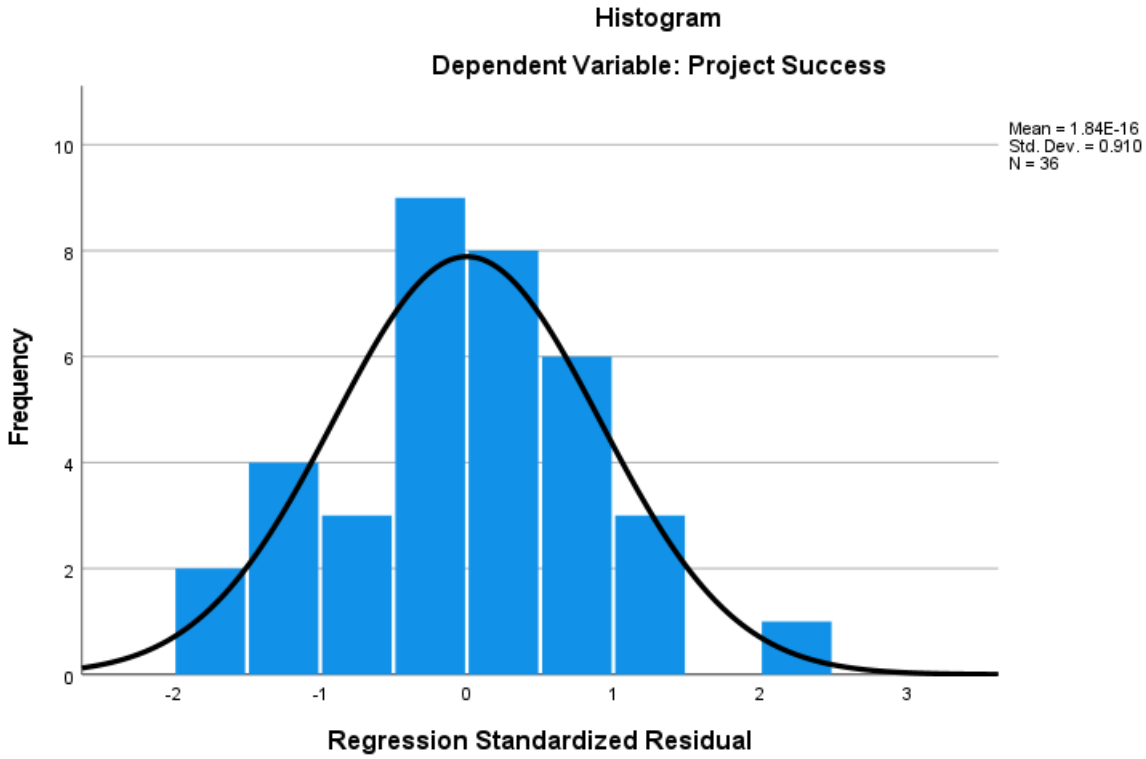
_____

~ ~ ~ ~ ~ 'Thank you very much for your time and effort!' ~ ~ ~ ~ ~

Appendix – C: Regression Assumption Test

Normality





Autocorrelation

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.975[a]	.951	.941	.13106	1.709

a. Predictors: (Constant), Top Management Support, Authoritarian Leadership, Laissez-Faire Leadership, Transactional Leadership, Transformational Leadership, Democratic Leadership

b. Dependent Variable: Project Success

Homoscedasticity