



ST. MARY'S UNIVERSITY SCHOOL OF GRADUATES

**THE EFFECT OF LEADERSHIP COMPETENCIES ON PROJECT SUCCESS, IN THE
CASE OF ETHIOPIAN DEFENSE CONSTRUCTION ENTERPRISE, ADDIS ABABA.**

BY

SAMSON ASCHALEW

AUG, 2020 G.C

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**A THESIS SUBMITTED TO ST. MARYS UNIVERSITY SCHOOL OF GRADUATE
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ADDIS ABABA

**ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES FACULTY OF
BUSINESS**

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of my research advisor Dr. Solomon Markos. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has been submitted fully to St. Mary's university school of graduate studies faculty of business for the purpose of earning degree of master of business administration (General management concentration).

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ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

Advisor

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ABBREVIATIONS AND ACRONYMS

P_s	Project success
L_{st}	Leadership style
L_{sk}	Leadership skill
L_T	Leadership trait
L_C	Leadership control
L_E	Leadership experience
α	Cronbach's alpha
r	Pearson's correlation
P	Level of significance
Pr	Probability
SW	Shapiro-Wilks
S_K	Skewness
H_a	Alternative hypothesis
X_a (diff)	Mean difference for two variables
X	Mean
σ	Standard deviation
β	Standard beta weight

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ABSTRACT

The main objective of the study is to examine the effect of leadership competencies on project success at Ethiopian Defense Construction Enterprise. The study identified five aspects of leadership competencies and investigate their effect on project success. The specific objectives of the study are to determine the effect of leadership styles, skills, traits, control and experience on project success. Explanatory research design is adopted for this study. The study targets a population of 126 respondents who are involving in the implementation of Ethiopian Defense Construction Enterprise projects in Addis Ababa and a sample size of 88 respondents are considered. Proportional stratified random sampling used to sample and select the respondents.

Data were collected through questionnaire developed within the context of the cited publications and specialized journals which were delivered in hand and sent via email to the respondents. Quantitative data were collected and analyzed by the use of statistics such as frequencies, percentages, means, standard deviations, classical hypothesis test, correlational matrix, normality test, and regression analysis. In addition, the study conducts analytical hierarchical process to establish the relationship between the dependent and independent variables. Qualitative data were used through content analysis.

Key words: project, project success, project employees, leadership competencies, leadership style, leadership skill, leadership trait, leadership control, and leadership experience.

CHAPTER ONE

INTRODUCTION

This segment focus on introducing the company, the thesis topic and provide an overview of the research paper; highlighting the topics that discuss and fully explored in the remainder of this document. This chapter explains the background of the company, the main topics, major inquiries, highlighting the thesis objectives, statement of the problem, research questions, research hypothesis, significance of the study, scope of the study and presenting a breakdown of the research structure.

1.1. Background

1.1.1. Background of the company

Ethiopian Defense Construction Enterprise is a governmental construction company in Ethiopia, established in 2008 G.C as Grade I construction firm. Ethiopian Defense Construction Enterprise, has grown to be a very competitive construction enterprise with favorable prospects for a role of excellence in the construction industry.

Currently, the company has more than 2000 professional permanent and contractual employees (Ethiopian Defense Construction Enterprise HR project employees report,2019), in Addis Ababa project site, thus boasting the wider company network any to the state owned. The company works on building, roads, irrigation and dam construction projects throughout the country to contribute for national growth set by the government. Similarly, the company in cooperation with other private construction companies has built many construction projects in the capital city and rural areas of Ethiopia.

“Besides satisfying the infrastructural needs of national defense with the competent human skill and modern construction technology, the company strives to use its extra capacity in the development of various infrastructures in domestic and neighboring countries and becoming most sought after construction work performer at high level of quality, cost, and time while enhancing the development of the nation” (Ethiopian Defense Construction Enterprise.,2020).

1.1.2. Background of the study

Projects are characterized by their uniqueness, complexity, sequential activities, the high degree of conflict, and risk and uncertainty they are associated with. Project management is a science that emphasizes on benefits that projects bring to various stakeholders while focusing on project manager's abilities to lead and manage the complexity of project tasks and resources. Project management is a very distinct field from traditional management; in project management, managers are constantly faced with completely new challenges, the environment changes from time to time and the resources are limited; and in traditional management managers are concerned with activities that are aligned with business as usual. Therefore, the components that make up leadership in project management are substantially different than those that are required for traditional management. Due to the broad scope of leadership and management, traditional management this thesis merges the focal point to only those critical aspects that involve leadership competencies as a key for project success.

Vast amounts of literature on project success factors have largely ignored the impact of a comprehensive project leadership competencies on project success. Although there are a number of comparable researches conducted focusing on project management; there are extremely scarce research that has been conducted to support the contribution of project employee's leadership competencies for the success of projects, the critical valuable leadership factors comprehensively for project success have not been fully exposed in previous studies (Gary, 2016).

Projects are successful, have high performance index, when project employees equipped with technical abilities and proficient leadership competencies. This research presents a definition of leadership competency and highlight those competencies that are key to project success. Additionally, touch on several studies supporting leadership constraints and the role of the project employee's leadership competencies as a critical component to project success. The project employee's role can be more challenging than of a typical functional manager, due to the fact that project employees work across functional and organizational environments, matrix organizational structure. The typical challenges that project employees encounter have a higher complexity level, uncertainty is unavoidable and planning and forecasting is critical. project employees have to

improve their leadership competencies in an attempt to cope with challenges and improve the performance of a project.

This research attempt to gather information from several professionals actively involved in project management and project activities to identify their leadership competencies that have significance effect on the success of projects. The focus of this study aim on trying to demonstrate the relation between leadership competency and project success at selected Ethiopian defense construction enterprise projects, Addis Ababa.

1.2. Statement of the problem

The research gap on the topic were identified from preliminary interview questions with project coordinators, who were settled in the headquarter and additionally from different literature reviews from various Author(s).

From the preliminary interview conducted with project coordinators, a number of resources including but not limited to finances, facilities and human resources are deployed to see successful project performance. However, many continue to fail despite the huge financial resources injected into these projects. In the recent performance percentage index from the total projects currently under construction in Addis Ababa shows, 27% poor performance, 41% fair performance and 32% of the projects are exhibiting excellent performance (Projects Performance Index, 2019). Some of these projects overstretch their given time of execution and budgets while others lack in quality. This has adverse effects since it makes some donors withdraw their financial support. The interview identified leadership competency as one of the factor influencing the project's success.

The preliminary interview with project coordinators reside on the headquarter reveals there lagging in the completion of projects due to different variables. The coordinators agreed leadership competencies of project managers and their employees, who are assigned in different projects, definitely contribute in the failures of project completion as planned in the initiation stage. There was consensus the need to investigate project managers and their employee's leadership competencies in terms of leadership style, skills, experience, traits, control and other factors which attribute for not achieving what was articulated in project initiating phase. It is for this reason that

this study seeks to examine the effect of project leadership competency on the success of projects on selected Ethiopian Defense Construction Enterprise Projects, Addis Ababa.

PMI Inc. (2008) argued that project group coordination, project strategy, project culture, project orientation, project structure, project system, project values and their alike are greatly impacted by the leadership approach embraced by project employees. In an innovational century leadership becomes crucial aspect of management for the success of a project (Bourne & Bourne, 2009). Interestingly the advancement in project management technology and methodology become intense and more advanced but still project are due to fail, leadership being a major cause (Pardey, 2007).

Borrowed from Lewis (2007), there is a strong correlation between project success and project leadership, and this relationship significantly translates to failure or success of the project. Effectively, every aspects relating to the development of the project is critical and the working environment for project managers and teams to execute their operations, generate a special relation and a necessity for leadership.

As presented by Joiner and Josephs (2007), in a project setting, as opposed to a management atmosphere, the project manager becomes a partner and a facilitator for the project team and provides support to accomplish the work required. The project manager becomes the driving force for the project team creating the vision of desirable outcomes and provides the resources to successfully accomplish the objectives of the project.

Stephen (2013), reported that close to half of development projects in the Sub-Saharan Africa were abandoned or reengineered after a 2-year implementation effort failed due to poor leadership.

A study done by Berhe (2017), on leadership style and performance appraisal of Agro Industries found out that project performance was dependent on the leadership of the management. Berhe conclude that no matter the investment a firm engaged in, and despite all the advancement in methods and techniques applied on any projects and investments proper and contingent leadership competency required for a project to be successful.

There are relatively less number of research works conducted on leadership aspects impacts on the success of project (Alene, 2014). Previous leadership research work one way or on the other focuses only one or two aspects of leadership competency constraints conducted on different investments area other than construction projects, as argued by Admasu (2009). As noted by kaleb (2011), suggested the need to explore the aspects of leadership with emphasis on skills, experience, and styles, in leadership in order to achieve success in project based organizations. Misganaw (2011), stressed the need of reexamination of the skills, traits and control in leadership required by project employees to deliver projects successfully.

Project failure is a shockingly common outcome of governmental and non-governmental organizations (Misganaw, 2011), Year after year reports on the accomplishment projects handled by government shows projects overstretch their budgets and are not completed on time and projects do not meet success requirement as they do not conform to time and budgetary requirements. This is largely attributed to the limited understanding by the project employees on how to utilize the aspects of leadership which include skills, experience, control, style, traits and control of leadership to influence the performance of their projects.

Even though there has been researches conducted on leadership and success, and leadership and performance, almost none have been conducted with the objective of comprehensively investigate leadership competencies required to successfully manage projects.

The studies conducted shows a research gap that most of them were focused on one independent variable, at most three independent variables that could not be generalized to other types of projects, and not conclusive of others variables that might equally affect project and employee's performance and success (Berhe, 2017; Alene, 2014; Admasu, 2009; Kaleb, 2009; Misganaw, 2011).

This research attempts to fill the gap of empirical evidence, through comprehensive investigation of the effect of leadership skills, leadership experience, leadership styles, leadership traits and leadership control of the project employees to project success of selected Ethiopian defense construction enterprise projects, Addis Ababa.

1.3. Research questions

The study aims to answer the following research questions

1. What is the relationship between project leadership competency; leadership styles, traits, control, skills, and experience, and the success of projects in the case of Ethiopian defense construction enterprise projects, Addis Ababa?
2. To what extent does leadership skills affect the success of Ethiopian defense construction enterprise projects, Addis Ababa?
3. To what extent does leadership experience affect the success of Ethiopian defense construction enterprise projects, Addis Ababa?
4. To what extent does leadership control affect the success of Ethiopian defense construction enterprise projects, Addis Ababa?
5. To what extent does leadership style affect the success of Ethiopian defense construction enterprise projects, Addis Ababa?
6. To what extent does leadership traits affect the success of Ethiopian defense construction enterprise projects, Addis Ababa?

1.4. Research objective(s)

1.4.1. General objective

To examine, the effect of leadership competency on the success of selected Ethiopian defense construction enterprise projects, Addis Ababa.

1.4.2. Specific objectives

1. To examine the effect of **leadership styles** on project success.
2. To investigate the effect of **leadership skills** on project success.

3. To investigate the effect of **leadership experience** on project success.
4. To examine the effect of **leadership traits** on project success.
5. To determine the effect of **leadership control** on project success.

1.5. Significance of the study

The construction industry has changed from who prevails the best leadership competencies, has an appreciable leadership styles, skills, experiences, traits and controls. Projects need employees with the right special skills and abilities, right attitudes and behaviors to make these happen. Project success culminating into effectiveness, efficiency, success and development depend on the optimal utilization of project manager's and their employee's leadership competencies. Notwithstanding the level of technology, construction is a labor intensive sector. Hence it is not possible for the construction projects to achieve planned objectives unless employees, tasks and resources are managed with the right leaders equipped with proper and efficient leadership competencies.

A study of this topic help project employees to appreciate the impact of leadership competencies for the success of projects. It also provides insights into adopting the "best fit" practices leadership competencies. The findings of the study are of great importance to project leaders as they get to understand on how leadership influence the success of projects, this assist them in selection of project employees with the right competencies and qualities that lead to better performance of the project. The findings and recommendations provide a solid basis for construction companies and others entities to properly manage their human resources, tasks and serve as an opportunity for the selected organization to improve its performance with existing workforce to achieve what was set at the initiation of each projects that under construction. The larger community stands to benefit since the improved performance and success of projects enhance the living standard of mostly the majority informal sector that deals with them and contribute significantly to the growth of the Ethiopian economy.

This study prompt policy makers and implementers to pay due attention to leadership competencies and its role in achieving projects success and organizational goals. The findings of

the study assist policy makers in the field of project management in designing policies with an aim of improving project leadership, as they are enlightened on how leadership competency affects project success.

Future scholars and academicians will benefit from this study as it will form the basis for future research as well as provide literature material for future research. The findings of this study add to the body of knowledge on the effects of leadership competencies on the success of projects. The academic significance of this work is to add to existing theories on leadership, serve as reference to those engaged in other related studies and create the leeway for another to further research into leadership competency and projects success. The study also adds to the knowledge of leadership concepts in the Ethiopian corporate world and serve as reference for future studies.

1.6. Scope of the study

This study focuses on the relationship between project employee's leadership competencies and project success among all levels of project management of Ethiopian defense construction enterprise projects, Addis Ababa. This study establishes the effect of leadership styles, leadership skills, leadership experience, leadership traits and leadership control on the success of projects under Ethiopian defense construction enterprise projects, Addis Ababa. The study target all levels of project management involved in the implementation of the projects. Although there are a number of unlimited other variables that may influence project success such are job satisfaction among employees, work environment, and project sponsors. However, the variables in this study are limited to project employee's leadership competencies and projects success at selected Ethiopian defense construction enterprise projects, Addis Ababa.

1.7. Organization of the study

This work is organized into five chapters.

Chapter One: Introduction

It comprises; background to the company and the study, statement of the problem, research questions and hypothesis which raise research objectives. It also covers the significance of the study, scope and limitations of the study and the sequential arrangement of the study.

Chapter Two: Literature Review

Provides a broad background for the subsequent chapters and an extensive review of existing research works on the concepts and theories which give a better understanding of the subject matter.

Chapter Three: Research Methodology

Encompasses the methodology to the study. It provides for research design; procedure and method, population covered by the study, description of the study area, sampling techniques, instruments, data collection procedure and analysis. A review of the methodology is provided under this chapter.

Chapter Four: Research Data Analysis

Focuses on data analysis and interpretation of the results and discussions.

Chapter Five: Summary, Limitations, Conclusions, Recommendations, and Suggestions

Main findings of the study are summarized and limitations factors while conducting the survey are stated. Embodies the conclusions drawn based on the findings of the study upon which recommendations are made as well as directions for future research on the subject matter.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter presents various studies from different sources, on how they examine and understand effects of leadership competencies on project success. This is the process of identifying and involving the particular study with established theories and previously published researches. The chapter covers theoretical literature review, empirical literature review, and conceptual framework of the subject matter.

Many authors have addressed the leadership competencies in relation to the success of projects. Both theoretical and empirical literature reviewed to gain more insight on the study of the effects of leadership competencies on project success.

2.2. Theoretical literature review

Theoretical literature review is a scientific term which can be defined as the major concepts describing the particular topic being studied (Gabriel, 2012). Also theoretical literature review can be understood as a collection of interrelated ideas in terms of various theories. The concepts and theories based on this study comprises of leadership competencies in relation to project success.

2.2.1. Leadership

Globally, leadership has become the most widely studied discipline and a number of theories have emerged focusing on the style, skill, traits, control and experience to leadership. As a result of ever-growing interest in the field of leadership, behavioral scientists and sociologists began to analyze the possible consequences of leadership and the variables that are used to predict the leader's leadership competencies. leadership is "an interaction between members of a group. Leaders are agents of change; persons whose acts affect other people more than other people's acts affect them. Leadership occurs when one group member modifies the motivation or competencies of others in the group." (Wagner and Hollenbeck, 2010).

The leadership definition implies that it involves the use of influence and that all interpersonal relationships can involve leadership. A second element in the definition involves the importance of being a change agent—being able to affect followers' behavior and performance. Finally, the definition focuses on accomplishing goals. The effective leader may have to deal with individual, group, and organizational goals.

Leadership is a process of interaction between leaders and followers where the leader attempts to influence followers to achieve a common goal (Northouse, 2010). Kirkpatrick & Locke (1996) asserts that leadership is wide spread process, which calls for authority, responsibility and delegation of power. Leaders help to direct, guide and persuade their followers (employees) towards achieving their personal and organizational goals and objectives. Thus, leadership styles cover all aspects of dealing within and outside of an organization, handling or dealing with conflicts, helping and guiding the workforce to achieve and accomplish their tasks and appearing as a role model for all.

According to Kouzes & Posner (2003) leadership is defined as a process by which a person influences others to accomplish an objective and directs the organization in a way that makes it more cohesive and coherent. These are accomplished through the application of leadership attributes, such as beliefs, values, ethics, character, knowledge, and skills. Leadership is the integrated sharing of vision, resources, and value to induce positive change. It is the ability to build up confidence and zeal among people and to create an urge in them to be led.

Achua, & Lussier (2001) see leadership as a social influence process in which the leader seeks the voluntary participation of subordinates in an effort to reach organization goals and therefore a leader is a person who delegates or influences others to act so as to carry out specified objectives. Meindl, & Ehrlich (1997) defines "leaderships process by which an individual influences the thoughts, attitudes and behaviors of others by taking responsibility for setting direction for the firm, others to see and visualize what lies ahead and figure out how to archive it" (p.98).

Levine & Crom (1993) asserts that leadership is the ability to influence people to willingly follow one's guidance or adhere to one's decisions. On the other hand, whoa leader is; one who obtains followers and influence them in setting and achieving objectives. In Sundi (2013), "Leadership

is the ability to convince and mobilize others to work together as a team under his leadership to achieve a certain goal” (p.50). Leadership is the influencing process of leaders and followers to achieve organizational objectives through change Achua & Lussier (2013).

According to Armstrong (2004) Leadership is the process of motivating, influencing and directing others in the organization to work productively in the pursuit organization goals. Leadership is simply the ability to persuade others willingly to behave differently for achieving the task set for them with the help of the group. Leadership, is about listening to people, supporting and encouraging them and involving them in the decision-making and problem-solving processing. It is about building teams and developing their ability to make skillful decisions.

Conger (1987) define leadership as “individuals who establish direction for working group of individuals who gain commitment from these group of members to this direction and who then motivate these members to achieve the direction’s outcome”.

2.2.2. Leadership competencies

Leadership style

Cuadrado et al (2007) described leadership style as consistent set of behaviors /patterns, proposing two dimensions in leader’s behavior, structure initiation which includes task oriented leaders and consideration which includes relation oriented leaders.

Leadership styles are seen as approaches that leaders use when leading organizations, departments, or groups (Mehmood & Arif, 2011) Leaders who search for the most effective leadership style may find that a combination of styles is effective because no one leadership style is best (Darling & Leffel, 2010).

Autocratic leaders are classic “do as I say” types. Typically, these leaders are inexperienced with leadership thrust upon them in the form of a new position or assignment that involves people management. Autocratic leaders retain for themselves the decision- making rights. They can damage an organization irreparably as they force their ‘followers’ to execute strategies and services in a very narrow way, based upon a subjective idea of what success looks like. There is

no shared vision and little motivation beyond coercion. Commitment, creativity and innovation are typically eliminated by autocratic leadership. In fact, most followers of autocratic leaders can be described as biding their time, waiting for the inevitable failure this leadership produces and the removal of the leader that follows (Michael, 2010).

Democratic leadership style also referred as participative style strives to involve employee in organizational management and decision making. In this type of leadership, a manager understands that employee is more informed in some instances than their leaders and can therefore provide valuable insight that can enable informed decisions at the management level. It makes an employee feel important and appreciated at the work place and is therefore a very motivating method of running an organization. By involving employees in organization management and decision making serves to impart this skill in their routine job requirements besides grooming them for their next career levels within the organization (Turner & Muller, 2005). However, this style is only effective in an organization where employees are skilled and very knowledgeable in their areas of specialty since they are less likely to make work related mistakes that might be costly to the organization.

The Laisses-Faire which describes lack of interest, and rightly so because in this case a manager is almost detached away from the intricacies of organization and employee management. Much leeway is given to employee to use their best judgment and achieve individual or teamwork requirements, meet targets and work deadline (House & Shamir 2013). The manager hardly ever supervise employee or follow up on their progress but relies on internal organizational systems. This style too should be adopted where the employee is qualified and competent in discharging their duties without direction and are mature to achieve self-motivation.

Leadership trait

Leadership traits focuses on the leader's values and beliefs; personality; need for achievement or acceptance; orientation to power, mental, physical, and emotional attributes. Effective project leadership traits and skills ought to be applied according to the specific stage of the project.

As Dubrin (2010) emphasized that the trait approach assumes the existence of leadership personality and that leaders are born and not made. Also agrees that the trait approach stresses on

the personality of the leader above all factors. Dubrin (2010) highlights common traits leaders displayed are courage, internal locus of control, passion, emotional intelligence, flexibility and adaptability. In the context of project management, the traits of an effective leader as Dubrin documented are highly critical; however additional traits are also highly important.

DSouza (1989) identified the clusters of traits as character, technical and professional expertise, problem solving and analytical ability, innovation, self-development, focus on results, setting goals, taking personal responsibility for outcomes, effective communication, inspiring and motivating others, trust and interpersonal effectiveness, concern for others, development, ability to champion change and ability to relate well to outside stakeholders.

Leadership trait is the behavior of leaders that distinguishes them from their followers. It focuses on the actions of leaders rather than on mental qualities or internal states with the belief that great leaders are made, not born. According to this theory, people can learn to become leaders through teaching and observation.

Leadership control

Leadership Controls are necessary to help ensure that firms achieve their desired outcomes (Redding, 2002). These are formal information based procedures used by managers to maintain or alter patterns in organizational activities. Leadership Controls help to build credibility, demonstrate the value of strategies and promote and support strategic change (Shields, Deng and Kato, 2000).

The effectiveness of leadership controls is increased substantially when leaders are able to integrate disparate sets of information to yield competitively relevant insights (Hit & Hoskisson, 1996). Financial controls focus on short-term financial outcomes (Lavery, 1996).

An appropriate balance of leadership controls over finance, information, project process, clients, and learning and growth allows firms to effectively monitor project success. The four perspectives are integrated to form the balanced scorecard framework are: financial, customer, internal business processes, and learning and growth (Mische, 2001).

People seek feedback and then set goals based on that feedback (Redding, 2002). Leadership control emphasizes that people continually seek feedback therefore control applied in areas of evaluation, weekly check-ins, and team meetings.

Leadership skill and experience

The accumulation of exceptionally talented individuals is not enough for the organization, there must also be a desire on the part of individuals to invest their skills and expertise in the organization and their position (Rastogi, 2000). According to Berg & Karlsen (2007) skills can be acquired through education and (formal) training but also (and mainly) through the course of people's activities at work (learning-by-doing). Rastogi (2000) points to the fact that most specific job skills are learned from performing the work activities themselves. He goes on to argue that there is no perfect substitute for apprenticeship and for work experience itself. The knowledge and skills a worker has which come from education and training, including the learning that experience yields, generate a certain stock of productive capital.

A manager's experience is measured in terms of time in years, past involvement and should reflect in the quality of his work. Leadership skill and experiences of great importance and can be applied by project managers to improve the success of projects. Project managers and teams should invest in education and training in order to acquire knowledge and skills for successful project implementation.

The project leaders should have previous related job knowledge gained through past involvement that help detect patterns and problems that might arise in the course of project implementation. Employees serving in lower supervisory levels should be promoted to higher levels since they have a wide pool of knowledge and technical skills (Zhu, Chew & Spangler, 2005).

2.2.3. Project success

The end results of the project are highly dependable on the behavior and actions of the project manager. Any successful outcomes or fallouts are accredited to the particular steps that the project manager deliberately decided to take. The success factors of each project are measured differently; projects may be quantified by cost savings, on-time deliverables or overall added value to the

stakeholders. Although each project will be initially set with specific measurable factors to gauge success, the fundamentals to aim and achieve overall project success require the ability to apply certain core leadership competencies. In this research paper, focal point is to identify those competencies that are more generally applied in every project. Some of the high level leadership attributes that encompass the key set of competencies are leadership style, skill, traits, control and experience.

Project success theory has been developed since the early 1970s. Definition for project success is initially focused on measuring cost, time, and project delivery quality (Belout & Gauvreau, 2004). Ika (2009) explains that project success could be measured against overall objectives; however, project management success rather is measured against the traditional factors of performance such as completing project within time, cost, budget, scope and quality.

This explains that project success can be defined as an analogy of a hexagon, where, in addition to the traditional dimensions of time, cost, and quality; other requirements must be met such as the strategic objectives of the client organization, the satisfaction of the end users, and the approval of other stakeholders. Respectfully, successful project outcome is measured by the extent to which the project accomplished complex endeavors that effectively met a specific set of objectives within the constraints of budget, time, quality and scope.

Typically, the success criteria for a project are identified in the earlier stages, however, in reality; there are a certain number of unknown conditions that must be met in order for a project to be successful. The complexity of project management lies in the fact that not every project is exactly identical (Grosse, 2007). Every project has a certain degree of distinction; this particular disparity is almost as unique as a fingerprint, that no two is ever identical. Therefore, to achieve successful results in project management, certain fundamental factors must be exercised, in addition to meeting the remaining of the project's unique conditions.

Assessment of project success may create conflict if there are experiences, sets of values, and expectations which is uncommon among project stakeholders (Rad, 2003). The perception of project success does not yield full mutual agreement between stakeholders, and people in different

role. Hence, to ensure project success, it is important to have quality of planning that include the perspectives of all stakeholders.

The traditional view of the triple constraints of time, cost, and quality and an enhanced view considering the different perspectives of all project stakeholders (Rad, 2003); (Cook, 2004); (Hughes, Tippett, & Thomas, 2004). This suggest additional success criteria may include stakeholder satisfaction, achievement to organizational goal, benefit to organizational strategy and team satisfaction. Further they argue, this is also well true for leadership competencies.

Time management describes the process required to ensure timely completion of a project. It consists of activity definition, activity sequencing, activity duration estimating, schedule development, and schedule control. Project time can be optimized using certain techniques such as Gantt chart, Pert chart, Critical path method, and alike (Lewis, 2007).

Cost management is the process by which companies control and plan the costs of doing business. It is advisable to constantly review the budget as well as the trends, and other financial information. Project cost could be managed through the usage of project budget planning, keeping track of costs, effective time management, project change control, and use of Earned value (Richmand, 2002).

Quality management is focused not only on product quality, but also the means to achieve it. Uses quality assurance and control of processes as well as products to achieve more consistent quality. Focus on quality is central to any successful project. While time, scope and cost can be negotiated, once quality is defined during planning, must not be negotiated (Lewis, 2007). Quality control is a process that is used to ensure a certain level of quality in a product or service. Quality control emphasizes testing of products to uncover defects and reporting to management who makes the decision to allow or deny product release. Quality control means ensuring consistency in processes to achieve conformance through the usage of Flow charts, Run charts, Check sheets, and Histograms, and Pareto analysis (Hearkens, 2016).

Scope is all the works involved creating the product. Project scope is the works that needs to be accomplished to deliver a product, service, or result with the specified features and functions. Scope management steps

The project scope management plan documents how the project scope will be defined, managed, controlled, verified and communicated to the project team and stakeholders. It clearly defines who is responsible for managing the project's scope and acts as a guide for managing and controlling the scope (Alfred & Luminite, 2014). Project scope management includes;

Planning: deciding how the scope will be defined, verified, and controlled. This majorly includes project charter, preliminary scope statement and project management plan. This steps elements project title, start and end dates, teams, objectives, budget, roles and responsibilities, summary of approach, charter, and initial scope statement.

Work breakdown structure (WBS): is a process of subdividing the project into tasks and milestones. A WBS in project management and systems engineering, is a deliverable oriented decomposition of project into smaller components. WBS is a tool used to define and group a project's discrete work elements in a way that helps organize and defines the total work scope of the project. Is a document that provides the basis for planning, and managing project schedules, costs, resources, and scope. Help to decompose project into deliverable smaller pieces.

Verification and control: acceptance of the scope and process to control scope. This ensures changes are processed according to procedure developed as part of integrated change control. In short it manages changes when they occur and monitor trends.

The client is primarily concerned with meeting the objectives of the project (Rad, 2003). Schedule and cost attributes are of secondary importance in determining project success (Shatz, 2006). The basis for measuring the success of a project for successful implementations for project deliverables when organization initiates a project, is typical (Shatz, 2006). The project team focus on the means to complete the deliverables while the client focus on the quality for the deliverables (Rad, 2003). Hence in the view of the customer, project success is in term of if the project is properly delivered and the project team view if fundamentally different, for the mean to achieve project success, which is suggested to be in secondary to project delivery.

Perception that contribute to project success and how project success is defined is factors that project managers is relying upon (Kendra & Taplin, 2004). Time, budget and quality remains as key measurable factor for project success were perceived by project leaders against transitional

way of measurement (Kendrick, 2012). However, the main objective of the project attainment was the most important success factor, despite the criteria of time and budget were met (Alfred & Luminita, 2014).

Determination of project success or failure rests with the project sponsor and the ability to fulfill the client's needs and expectations in meeting project time, quality, budget and scope (Kendra & Taplin, 2004). Since projects are unique in nature adopting compatible leadership competencies accounts for their great success, and understanding how the project manager's leadership competencies affects projects success will aid in the development of future project managers (Belout & Gauvreau, 2004).

As it is indicated in the literature review although there are number of project success criteria's only project time, budget, quality and scope are considered for this subject matter. Therefore, projects are said to be successful if and only if they are completed in time within the budget approved at required quality and addressing all the scope.

2.3. Empirical literature review

PMI (2008) defines leadership competencies as the application of skills, tools, and techniques to develop project activities to meet project requirements. The development of project activities requires project employees who understand the objectives and limitations of the project, as well as the roles of each participant. Kloppenborg et al. (2003) explains that all projects have unlimited constraints in regards to how well and how fast the proposed goals can be achieved. These constraints basically include budgets, costs, time, and scopes. These limitations generate risks and tend to obstruct timelines in meeting objectives. Project employees are individuals assigned with the highest level of responsibility to manage and execute the project and obtain desirable results. Project employees must be capable of effectively applying technical and intellectual tools and strategies in order to manage the project successfully. Project employees are generalists with many competencies in their repertoires; these competencies have been enabled them to implement a very successful projects.

Project employees are responsible to oversee not only the detail tasks of a projects but must also support the individual personalities of each project member. Therefore, the role or a project

employee requires management and leadership competencies where the emphasize lies on managing daily complexities of the project and effectively leading the project team. The success of project depends highly on the leadership competencies and the general management competencies of the project employees. Leadership and management are terms often used interchangeably (Turner and Muller, 2010). However, there is great distinction between the approaches in which the person in charge achieves their objectives.

Project leadership can be more generally defined as a process that utilizes a system of tools and sequential procedures to track how the project budget, time, quality and scopes are being efficiently managed. Project leadership emphasizes a personal commitment from the project team and adds intangible value to the project's objectives and aims for project success (Richmand, 2002). The project employees ought to engage the project members so profoundly that any setback or degree of failure in the project is unacceptable. Leadership competencies generates desirable visions, charismatically build trust and commitment to greatness, have high regard and consideration for the team, inspire team work and provide support and direction to success of projects.

The research (Haregeweyn, 2013) found a significant positive linear relationship between leadership competencies and employee performance. The study also concluded that there is a moderate high positive and significant relationship between the three leadership styles (autocratic, lassies-faire, democratic), and success. The researcher revealed further findings that leaders use autocratic style of leadership to influence employees to perform their duties, but laissez - fair style of leadership dominated which could have caused delay in meeting deadlines. The findings also revealed that the mangers have realized some performance in terms of increased work forces, high speed of accomplishment of work, effectiveness and timeliness due to democratic leadership.

Kasay (2015) who sought to study the effect of leadership competencies on project performance, the study employed a descriptive survey design and adopted a combination of both quantitative and qualitative methods, descriptive statistics was used to analyze data using mean, frequencies, standard deviation and percentage and the findings presented using tables. reveals that good leadership competencies were practiced and available especially in top level managers and leadership competencies have a positive relationship with project success. The results also

indicated that experience was a better predictor of performance than other leadership competencies. The findings showed that experience indicate a nonlinear relationship with performance.

Tsigu and Rao (2015) in his study “leadership competencies: their impact on job outcomes in Ethiopian banking industry” found that leadership style explained the variation on performance better than other leadership competency factors. Descriptive research design was used .and the sample size was 50 banks. Hence, the researchers recommended that if banks under study emphasize more on leadership style dimensions, it would enable them to better satisfy and hence gain more output from their employees.

2.4. Research hypothesis

Interestingly, studies assert that there are strong relationships between leadership styles, leadership skills, leadership traits, leadership control and leadership experience with the success of projects. Leadership competencies have clear effect on the performance and as planned success of projects (Berhe, 2017; Alene, 2014; Admasu, 2009; Kaleb, 2009; Misganaw, 2011; Dubrin 2010; Redding, 2002).

Hence this research examines and establish if there is or no any whatsoever significant relationship between leadership competencies with project success in the context for Ethiopian Defense Construction Enterprise projects, Addis Ababa. The results of this study provided reliable evidence either to support or reject the premises, null hypothesis, established based on literature reviews.

Hypothesis 1_o: There are no significant relationship between leadership styles and of project success.

Hypothesis 2_o: There are no significant relationship between leadership skills and of project success.

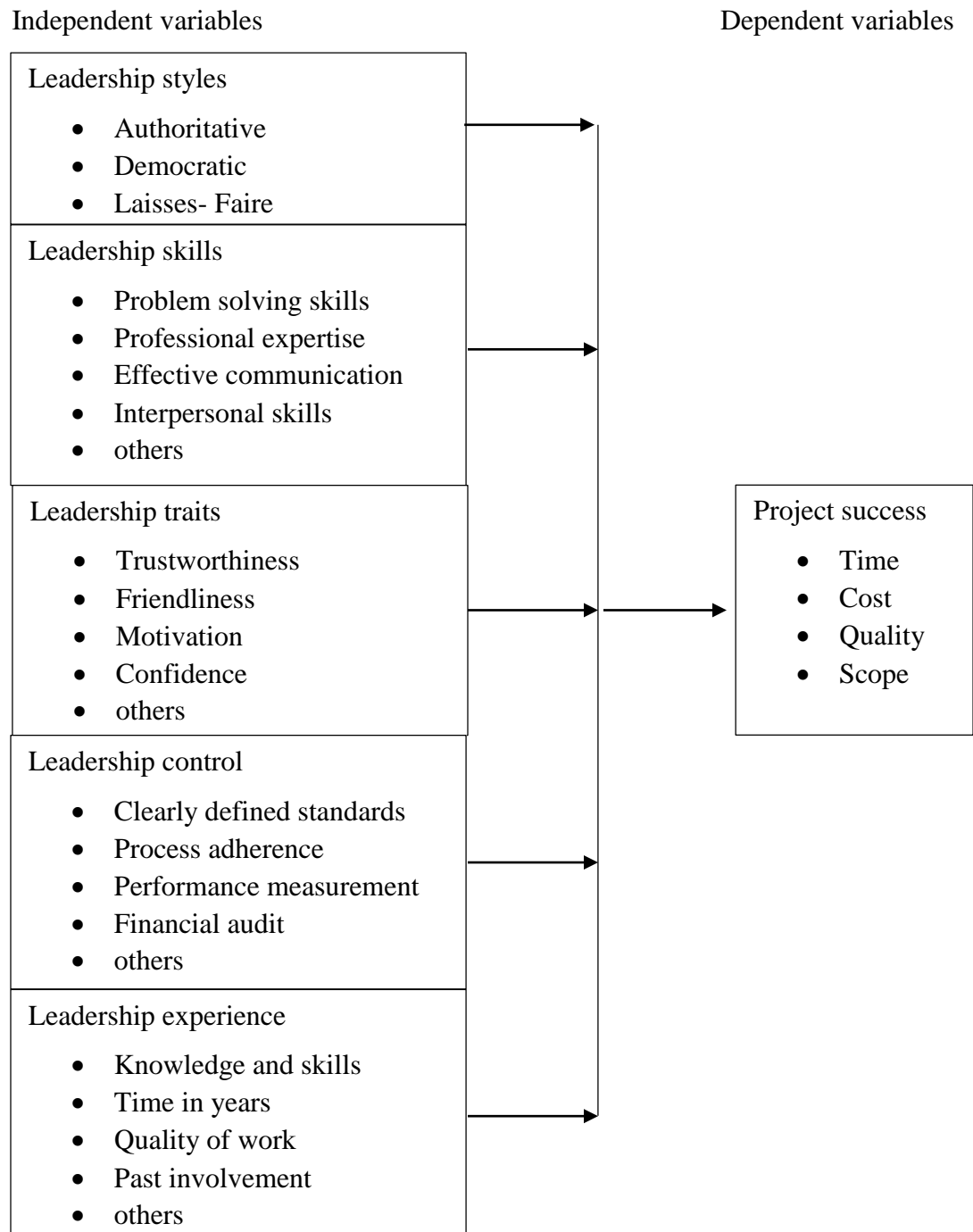
Hypothesis 3_o: There are no significant relationship between leadership traits and of project success.

Hypothesis 4₀: There are no significant relationship between leadership control and of project success.

Hypothesis 5₀: There are no significant relationship between leadership experience and of project success.

2.5. Conceptual framework

Figure 2. 1 Conceptual framework



Source: Modified from Turner and Muller (2005); Turner, Muller and Dulewicz (2010)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This chapter describes methodology used for collecting, analyzing and interpreting the data in the study. It describes the research design, population, sample and sampling techniques, instruments for data collection and procedures, pilot tests and as well as data analysis methods suitable to the achievements of the stated objectives.

3.2. Research design

The primary purpose of explanatory research is to explain why phenomena occur and to predict future occurrences. Explanatory studies are characterized by research hypotheses that specify the nature and direction of the relationships between or among variables being studied. Probability sampling is normally a requirement in explanatory research because the goal is often to generalize the results to the population from which the sample is selected (Ghauri Pervez ,1995). The research uses quantitative data's and requires the use of statistical test to establish the validity of the relationships. Explanatory research help obtain better understanding of the relationship between casual interrelated phenomena. Thus, on this ground explanatory research design found to be suitable to analyze the effect of leadership competencies on project success and would attempt to understand how leadership competencies factors are contributing to the success of project in selected Ethiopian Defense Construction Enterprise projects, Addis Ababa.

3.3. Target population

Samples from the targeted authority were selected depend on the presumption to represent the whole population and researcher knowledge and ability to conduct the research at satisfying level with confident level of precision to defy minor limitations.

The study targets 126 (HR project employees report,2019) number of respondents who comprised of project managers, project team case leaders, consultants, design and inspection managers, and

engineers (i.e. civil, electrical, sanitary and others) who are involved in selected Ethiopian defense construction enterprise projects, Addis Ababa.

Table 3. 1 Target Population

Targets	Projects		
	INSA Project	Goffa Apartment Building Project Phase 1	Goffa Apartment Building Project Phase 2
Gender			
Male	51	24	24
Female	14	9	4
Project employees			
Project managers	1	1	1
Project team case leaders	6	4	3
Consultants	9	4	6
Design and inspection managers	19	13	10
Engineers	30	11	8
Total	65	33	28
Grand total			126

Source: Survey Data (2020)

3.4. Sampling design technique and size

This refers to the techniques adopted in selecting items for the sample (Ghauri Pervez ,1995). The sampling technique to be used is Stratified random sampling. Stratified random sampling divides the population in to smaller group based on shared characteristics. Then, random sample is taken from each stratum in direct proportion to the size of the stratum compared to the stratum. To give and gain fair and equal representation, obtain sample population that best represent the entire

population being studied stratified random sampling was used to sample the respondents (Cooper & Emory, 1995). This helps to create conducive environment and gain the trust of project employees of Ethiopian Defense Construction Enterprise projects, Addis Ababa.

The sample size of the study determined using the Krejcie & Morgan (1970) tabulation, which recommended the appropriate sample for any given population.

Table 3. 2 Sampling Size

Respondents	Frequency	Sample	Sample Ratio
Project managers	3	3	1
Project team case leaders	13	9	0.69
Consultants	19	13	0.69
Design and inspection managers	42	29	0.69
Engineers	49	34	0.69
Total	126	88	

Source: Survey Data (2020)

Therefore, the total number of respondents in this study was 88 respondents, this represents 69.84% of the target population.

3.5. Data collection instruments

As noted by Ghauri, Pervez N. (1995), to offers sense of privacy and confidentiality to respondent ants, to reach out respondents within a short time, to manage time adequately use of questioners is recommended. The questioner was developed in align with research objectives. The questioner encompasses demographic characteristics of respondents, leadership skill, experience, control, style and traits effect on the success of Ethiopian Defense Construction Enterprise projects, Addis Ababa, with structured questions to conduct quantitative data for statistical analysis. Data for content analysis open ended questions was developed. As all, the researcher used questionnaires as data collection tool.

The questionnaire was developed within the context of the cited publications and specialized journals that have focus on leadership topics. Every detail of the survey was taken into consideration in ensuring that it remains consistent with leading literature sources and academic findings of leadership competencies and project success (My skill profile, 2012; Siegel, 2012; TP3, 2015).

The questioner consists of 28 items and is evaluated on five-point scale. Respondents rate how friendly they or their leader display each item on a scale of 1-5 whenever appropriate.

Secondary data from annual projects reports, and the company official web address were used to cite the number, progress, achievement percentage index, and the difficulty projects are facing from attaining their goals. Even though, this information's were collected through preliminary interviews with project coordinators in the headquarter while addressing the research gap; it was helpful in triangulating the reliability and up-to-date information of secondary data's.

3.6. Data collection procedure

The researcher asks for letter of introduction and permission from both St Marys' University and Ethiopian Defense Construction Enterprise, Addis Ababa, to gain support and subordination for that it assures the research is academic in nature. The distributing of primary data's collection tools was through hand delivery and emails to make collection smooth and convenient for respondents as well for the researcher. Gathering of primary data was as the same as its distribution. This saves time, cost and all respondents had easy access.

Additionally, a significant number of informal meetings were conducted with key project management professionals in order to collect any complementary information that can add value to the research. Each participant was well informed of relevance of the questionnaire and the significance of the information that is being gathered. Due to geographical limitations, the data was collected from projects in Addis Ababa.

3.7. Data analysis and presentation

The study applies both qualitative and quantitative approaches for data analysis. Qualitative data were analyzed through content analysis and identification of research gap; and presented in form of explanatory notes while quantitative data, were analyzed through descriptive statistics. All the data sets are analyzed using Stata 14 software at 95% level of confidence; recently upgraded and easy to use due to its flexibility; therefore, all quantitative analysis are presented in Chapter-4. In all cases statistical and numerical data were collected and logical conclusions were drawn from the result. The appropriate conclusion was drawn from the results from each question.

The data results are presented in **frequencies and percentages** in the form of tables and charts, gives an overall explanation about the survey results. Internal consistency of the survey data examined using **cronbach's alpha**, commonly used when the survey is done based on multiple Likert scale questions in a survey that form as scale and wish to determine if the scale is reliable, which provides with an overall reliability coefficient for a set of variables (Zigmund et al, 2009).

To determine if the data set is well modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed combination of Skewness-Kurtosis and ShapiroWilks **normality test** are conducted. The dependency among predictors variables and the outcome variable analyzed through **correlation matrix**, reveal the level of significance that each predictor variables have on the outcome variable. And then of course due to the fact there are more than two predictor variables **multiple regression analysis** is done, using mathematical relationship among numbers of a random variables help to model linear relationship between the explanatory variables and response variable, this allow to determine the overall fit of the model and relative contribution of each of the explanatory to the total variance explained (Cooper & Emory, 1995).

3.8. Validity and reliability

Saunders et al (2009), defined validity as a degree to which an instrument measures what is purported to measure. In coordination between the researcher and research advisor each item in primary data collection tool was examined to determine whether not the research question capture the research objectives in the instrument and assert there is adequate sample of the domain of the

content of the instrument they are supposed to represent. Each questions were critically selected and carefully developed to seek out valid responses from each participant.

Zigmund et al (2009), defines reliability as the extent to which results are consistent over time and an accurate representation of the total population under study, and if the results of a study could be reproduced under a similar methodology, then the research instrument was considered reliable.

Scale reliability is assessed using the internal consistency method by determining Cronbach’s alpha for each leadership competencies (independent variables) and project consistency (dependent variable). The Cronbach’s alpha assessment is given as: $\alpha \geq 0.5$; where $\alpha < 0.5$ is considered unacceptable reliability; $0.5 \leq \alpha \leq 0.6$ is poor reliability; $0.6 \leq \alpha < 0.7$ is questionable reliability; $0.7 \leq \alpha < 0.8$ is acceptable reliability; $0.8 \leq \alpha < 0.9$ is good reliability; and $\alpha \geq 0.9$ is excellent reliability.

Table 3. 3 Reliability test

Variables	Cronbach's alpha
Project success	0.8316
Leadership style	0.8271
Leadership skill	0.9476
Leadership trait	0.8644
Leadership control	0.8037
Leadership experience	0.7582

Source: Survey Data (2020)

Reliability of the questioner as exhibited in *Table 3.3* reveals the reliability of leadership skill ($\alpha = 0.9476$) considered to be highly reliable variable among the others; leadership style ($\alpha = 0.8271$), leadership trait ($\alpha = 0.8644$), leadership control ($\alpha = 0.8037$), and project success ($\alpha = 0.8316$) to be as good to be acceptable, and leadership experience ($\alpha = 0.7582$) falls to be at acceptable level of reliability. The data shows the entire internal reliability of the questioner in good form to be accepted as reliable documentation. In other word the effect of leadership competencies in project success as per the response of the respondents of the project employees of Ethiopian Defense Construction Enterprise could to be taken as reliable responses, the questioner for real measured what it supposed to measure.

A preliminary study was conducted prior to the main research to determine and identify research protocols, strategies, research techniques, and research challenges in preparation for the study during phase of identifying research gap. This helped in identifying potential problem areas and challenges in sample cooperation and protocols prior to implementation during the full study. One of the advantages of conducting a preliminary study is to give advance warning about where the main research project could fail, where research protocols could not be followed, or whether proposed methods or instruments were inappropriate or too complicated.

The preliminary study enabled to construct the proper and best fitted questioner that address the research gap identified during the preliminary study. Based on the coordinators suggestions bulky questions that had nothing to do with the study were eliminated. On the other hand, enriching the concept of project success criteria were done.

3.9. Ethical considerations

The researcher took careful caution while administering the data collection instruments to the respondents to ensure their rights and privacy were upheld. Prior to actual administration of the instruments, an introduction on the aim and the purpose of the study and the questioner made to the respondents in the language they best understood. The study had sought the consent of the respondents before they were provided with all the requirements of the study. To ensure confidentiality, the respondents' names were not appearing on the questionnaire. Furthermore, no respondents were coerced into the excise at any level. The study findings presented without any manipulation or influence by the researcher in any way.

CHAPTER FOUR

RESEARCH DATA ANALYSIS

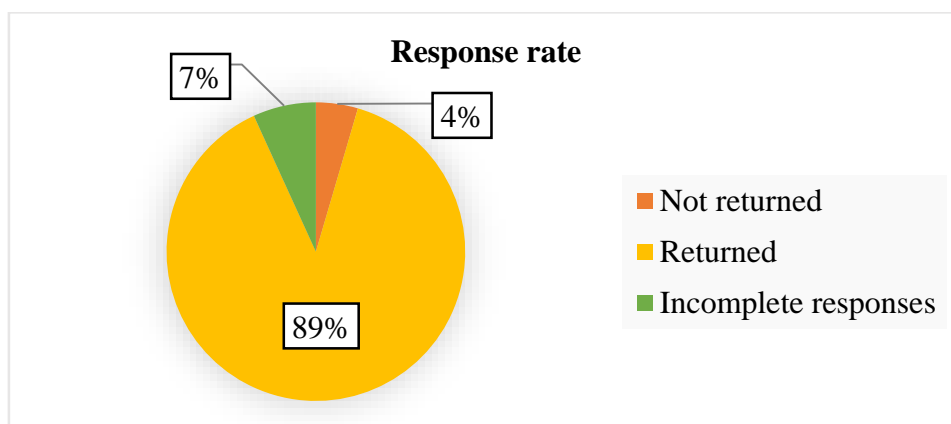
4.1. Introduction

This chapter presents analysis and discussion of the findings of the study on the effect of leadership competencies on success of projects in the case of Ethiopian Defense Construction Enterprise, Addis Ababa, Ethiopia. The chapter discuss the rates of respondent's response, respondent's demography, descriptive statistics for study variables and model diagnostic tests.

4.2. Response rate

The study targeted 88 respondents from Ethiopian Defense Construction Enterprise, Addis Ababa projects. To avoided data biasness due to two scenarios, one not all the number of targeted respondents expected to return distributed questioners and secondly some might return incomplete responses to the questioners below average, 95 questionnaires were distributed to the respondents. This increased the chance of getting returned questioners closer to the targeted number of respondents. Out of the 95 questionnaires issued 78 questionnaires, representing 89% of the total questionnaires distributed, were returned fully completed, while 4 questionnaires were not returned and 6 were full of incomplete responses, representing 4% and 7% respectively, as indicated in *Figure 4.1*.

Figure 4. 1 Response Rate



Source: Survey Data (2020)

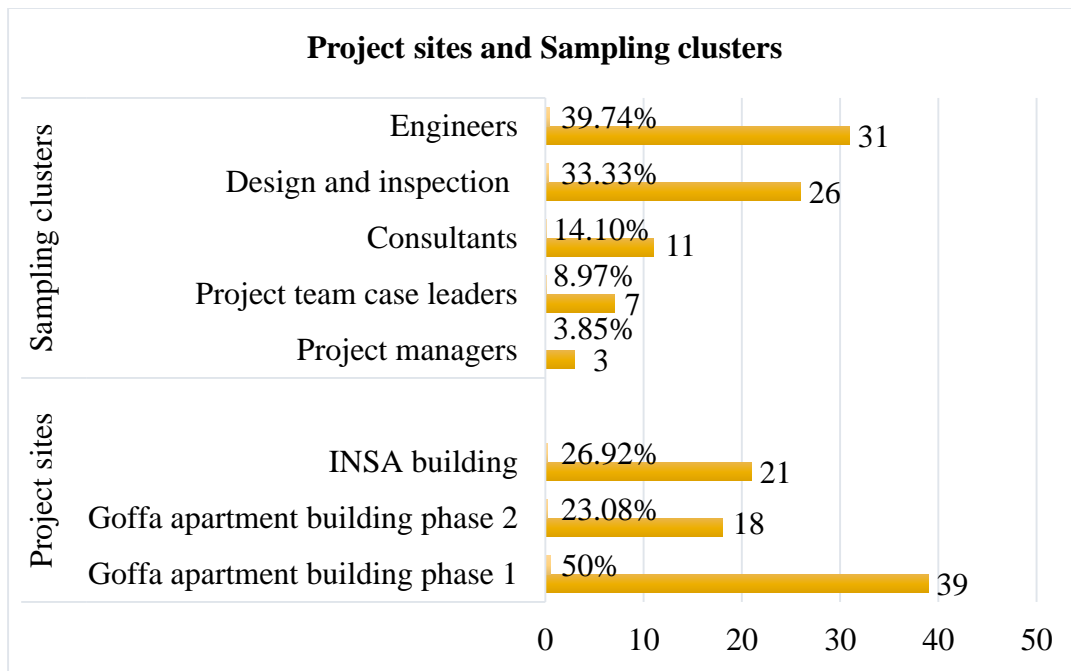
From this analysis, it can be inferred that the response rate of the study was good and acceptable to proceed, since it is above the 50% statistical significance according to Ghauri Pervez (1995).

4.3. Respondents demography

4.3.1. Respondents project sites and sampling clusters

The study targets three project sites of Ethiopian Defense Construction Enterprise, Addis Ababa. The sampling clusters grouped by five departments based on stratified random sampling, respondents were selected from the stratified clusters randomly with direct proportionality from each project sites. This helps to create conducive environment, give and gain; fair and equal representation, of project employees of Ethiopian Defense Construction Enterprise projects, Addis Ababa (Cooper & Emory, 1995).

Figure 4. 2 Project sites and Sampling clusters



Source: Survey Data (2020)

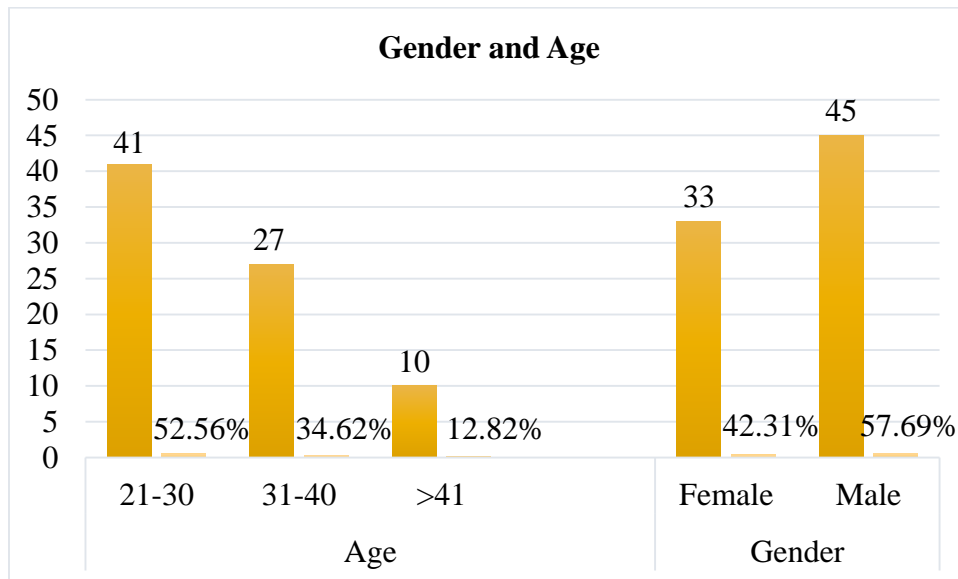
As Figure 4.2 indicated respondents were selected from the project sites and sampling clusters with direct proportionality. Half of the respondents were selected from Goffa apartment building phase 1, the rest goes to Goffa apartment building phase 2 and INSA building combined. The

combined number respondents from engineering and design and inspection departments representing 73.07% shows the projects values quality and focus on timely completion of projects as per the schedules of project managers, consultants and project team case leaders representing 26.92% of the sample (Sundi, 2013).

4.3.2. Respondents gender and age

Respondents age zone were represented by four age groups below 20 years, 21-30 years, 31-40 years and above 41 years of age.

Figure 4. 3 Gender and Age



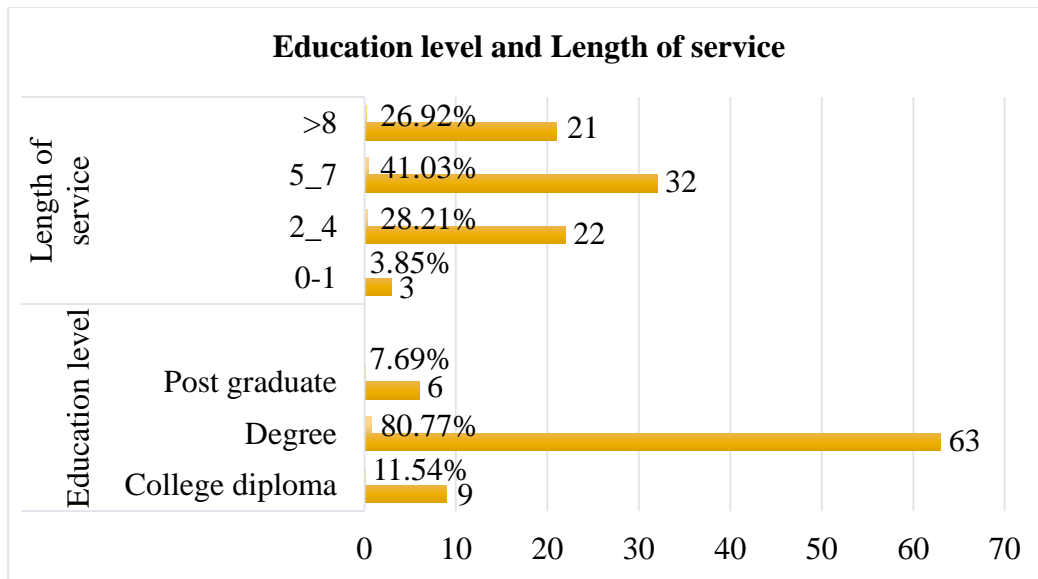
Source: Survey Data (2020)

Majority of respondents from the three project sites were male, represented by 57.69%. However, the gender gap from the cluster sampling departments indicates there are good opportunities for female applicants to get a job in those departments, avoids extreme gender gap and embrace modesty. The age graph shows 52.56% of the respondents were from age zone ranging from 21-30 years of age. An if this age zone add up with age zone ranging from 31-40, representing 87.18%, indicates majority of the employees from the clustered group are young and vibrant, who has a lot to give. There were none respondents below the age of 20.

4.3.3. Respondents education level and length of service

Respondents experience years were represented by four interval groups below 1-year experience, 2-4 years' of experience, 5-7 years' of experience and above 8 years' experience of age. Also, respondents were leveled based on their education level as of secondary school, college diploma, degree, and post graduates certificate holders.

Figure 4. 4 Education level and Length of service



Source: Survey Data (2020)

The three project sites activities are guided and implemented by majority of degree holders, representing 80.77%, of employees for the stratified clustered groups. The combined percentile, which is 19.23%, are post graduates and college diploma holders. The graph indicates positional power holder employees are educated. It can be said almost all respondents are well educated and fulfill the minima of project leadership educational criteria. On the hand still the length of service graph shows the combined percentile experience years ranged from 5 up to above 8 years of length of service, representing 67.95%, tells majority of the respondents are highly experienced and skill full employees. The years of experience they have make them trained and expertise on the subject of project success. This enhance the achievement of project quality through experienced human power using their vast knowledge of project overall goal achievement in timely completion. And again this generate a certain stock of productive capital (Rastogi,2000).

4.4. Descriptive statistics for study variables

The descriptive statistics analyze each question of the questionnaire independently to give an explanation of respondent responses to the five-point Likert scale agreement towards each of the questionnaire statements in terms of frequency and percentile of the responses. This gives a chance to explain simplified answers to what respondents do think the effect of leadership competencies; leadership style, leadership skills, leadership traits, leadership control, and leadership experience; have on the success of Ethiopian Defense Construction Enterprise projects. The qualitative analyses of the questionnaire are embedded with the analyses of the descriptive analysis explanations.

4.4.1. Leadership competencies

4.4.1.1. Leadership style

This part of the analysis sought to establish the effect of leadership style on the success of Ethiopian Defense Construction Enterprise projects based on respondents' responses to the independent questions.

Table 4. 1 Opinion on the effect of leadership style on project success

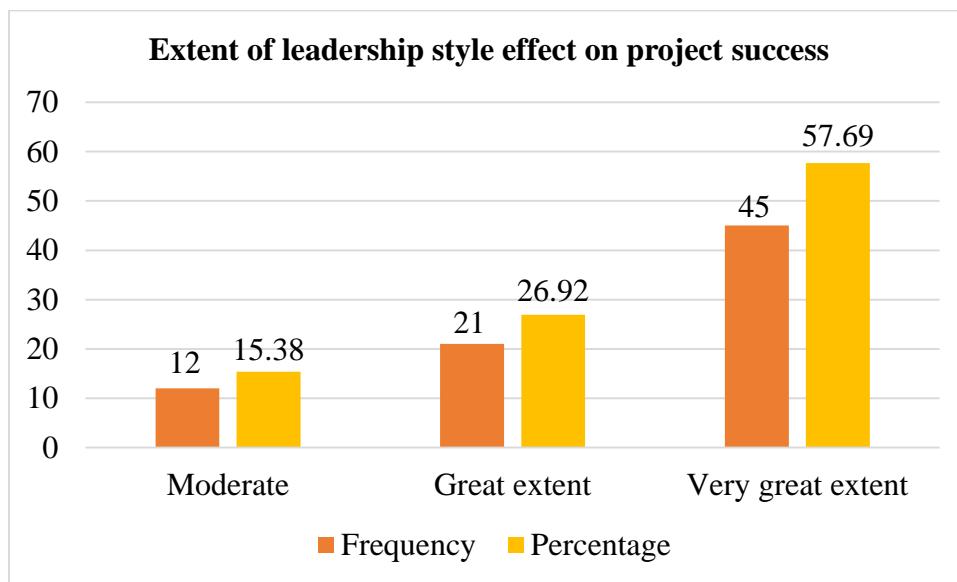
Respondents clustering groups	Opinion on the effect of leadership style on project success				
	Yes	No		Yes	No
Project managers	3		Design and inspection	26	
	100.00%			100.00%	
	3.85%			33.33%	
Project team case leaders	7		Engineers	31	
	100.00%			100.00%	
	8.97%			39.74%	
Consultants	11		Total	78	
	100.00%			100.00%	
	14.10%			100.00%	

Source: Survey Data (2020)

Finding indicates respondents from each of the three projects site recognize that leadership style have great impact on the success of the project they are implementing. With all consensus replied roughly show that project success is dependent on the leadership style used during the project cycle. As explained by the respondents the ability of a leader to apply task and relation oriented leadership style have effect on project success to its own extent and this claim supports Cuadrado et al (2007) argument.

Below explained respondents’ response rate regarding the extent of leadership style effect on project success of Ethiopian Defense Construction Enterprise.

Figure 4. 5 Extent of leadership style effect on project success

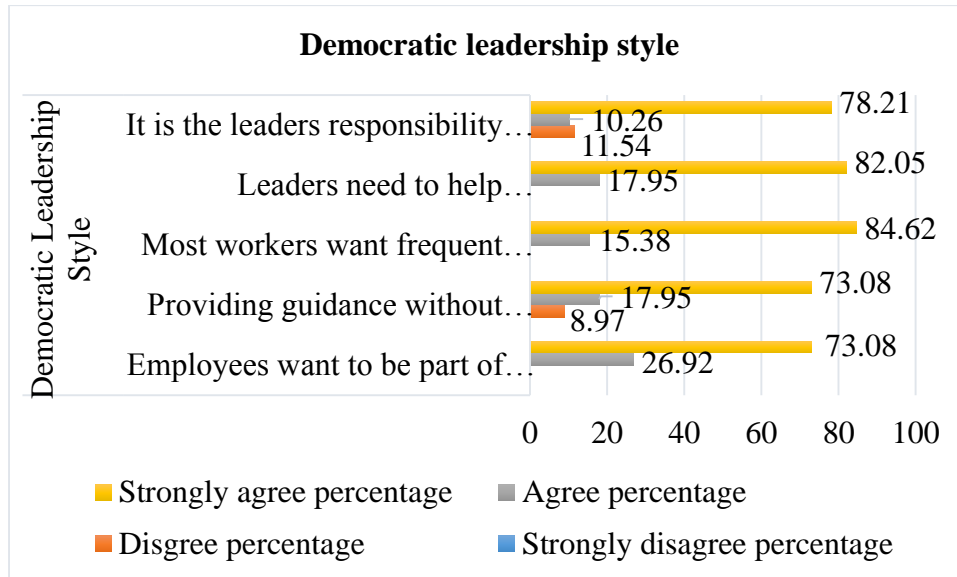


Source: Survey Data (2020)

Even though the survey response scale ranges from not at all to very great extent likert scale response the response get from the analysis only ranges from moderate to very great extent effect. The survey data reveals 57.69% of the respondents says leadership style have certain effect on project success to the very great extent. This quantity shows there is great deal of effect by leadership style since the quantity is even greater the combined response of the respondents ranging from great extent; 26.92% to moderate; 15.38% level.

In the following figures below illustrates respondents' agreement percentage corresponding to each statements with in leadership styles. Neutral responses to statements are avoided from each graphs since none of the respondents give any response to the statements using neutrality scale.

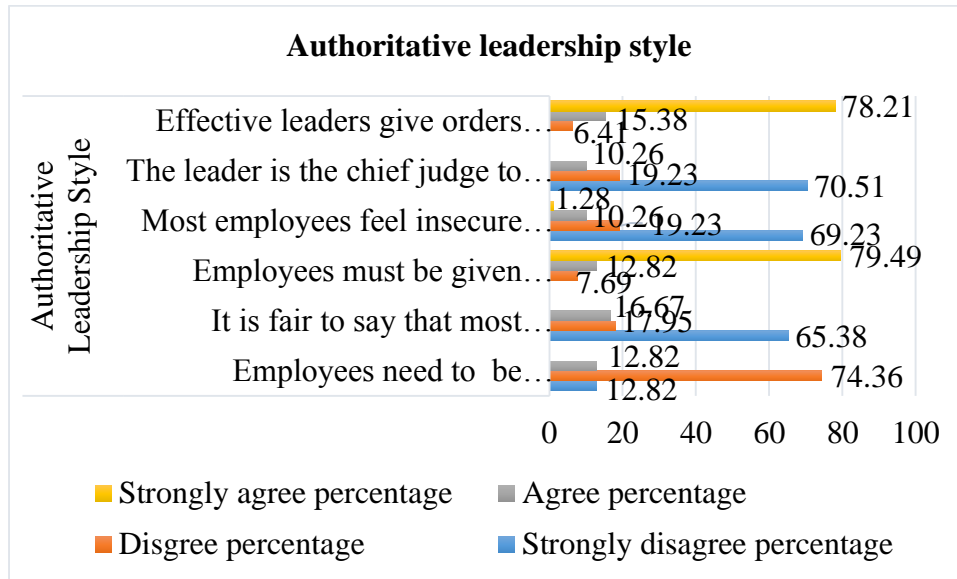
Figure 4. 6 Democratic leadership style



Source: Survey Data (2020)

The above Figure 4.6 vividly shows respondents were highly confident in their response, percentage >73% for all the statements, strongly agree for supporting democratic way of leadership for project to be succeed. Their response implies employees at Ethiopian Defense Construction Enterprise prefer engaging in decision making, effective guidance and communication, and proper help from leaders when appropriate to accomplish any given tasks in project cycle. As Turner & Muller (2005), stated this approach makes an employee feel important and appreciated at the work place and is therefore a very motivating method of running a project.

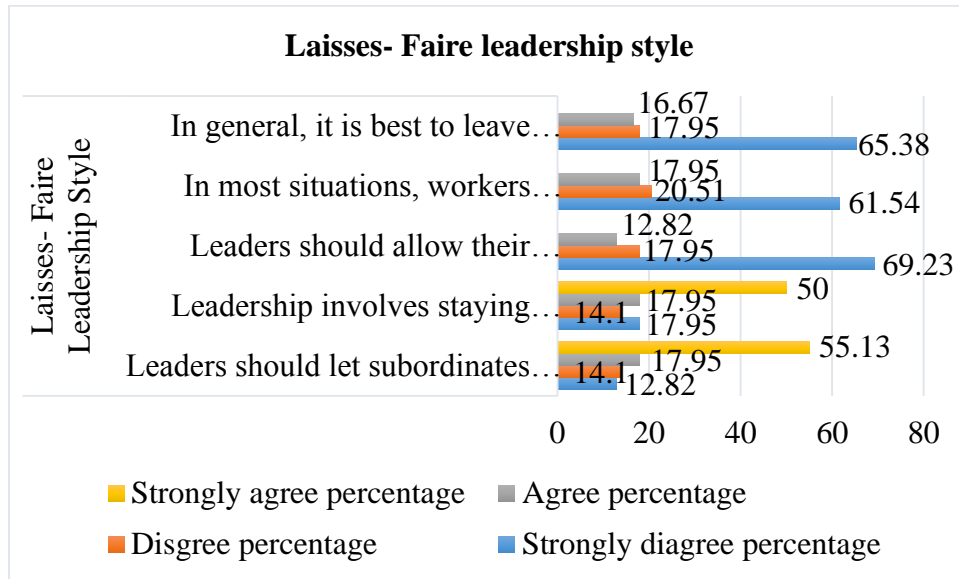
Figure 4. 7 Authoritative leadership style



Source: Survey Data (2020)

In the case of authoritative leadership style majority of the respondents, percentage >65%, strongly disagree to being casted out in the process of decision making and gaining project success credit for only top leaders. They consider good to be feel secure and independent, in addition hard working could characterize them. At the same time respondent's response, percentage >74%, disagree enjoying authoritative leadership. However, respondents strongly agree, percentage >78%, for a leader not to extremely loosen their leadership in a way that make obstacles from achieving project success. The graph shows there are no unanimous agreement regarding to embrace authoritative leadership.

Figure 4. 8 Laisses- Faire leadership style

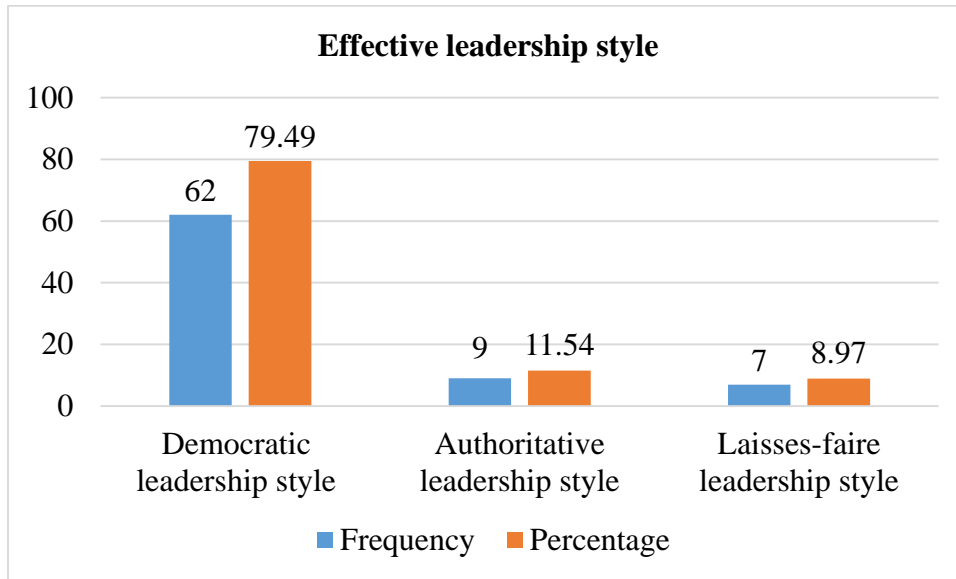


Source: Survey Data (2020)

As clearly shown in *Figure 4.8* respondents strongly disagree, percentage >61%, with the idea of being alone in executing a certain task with no need of help from colleagues. They reject self-oriented independent leadership and self-evaluation. But still they enjoy, percentage >50% strongly agree, to be alone self-dependent tasks achievement. This raise confusion in their response. Like authoritative leadership adoption of laisses-faire leadership lack unanimous agreement.

Although from the above three leadership styles graphs democratic leadership seems to have unanimous practical application to be adopted, and the other remaining two have confusion in their applicability to be adopted in the case of Ethiopian Defense Construction Enterprise projects. The *Figure 4.9* and *Table 4.2* below helps to clear the confusion regarding which leadership style preferred by respondents to be adopted to Ethiopian Defense Construction Enterprise projects for the projects to be successful.

Figure 4. 9 Effective leadership style



Source: Survey Data (2020)

Table 4. 2 Effective leadership style

Leadership styles	χ (Mean)	σ (Standard deviation)
Democratic	4.948	0.222
Authoritative	4.769	0.424
Laisses-faire	4.743	0.439

Source: Survey Data (2020)

Figure 4.9. confidentially illustrates 79.49%, majority, of respondents strongly prefer ($X = 4.948$, $\sigma = 0.222$) to adopt democratic leadership style. This shows democratic leadership style found to be the effective leadership style to be used for Ethiopian Defense Construction Enterprise projects to be successful. Respondents claim complies with Turner & Muller (2005), democratic leadership enhance participative and informed decisions making in achieving project success. If not for democratic leadership 11.54% of respondents for the second part strongly prefer ($X = 4.769$, $\sigma = 0.424$) to have authoritative leadership. And for last 8.97% of respondents strongly prefer ($X = 4.743$, $\sigma = 0.439$) to practice laisses-faire leadership.

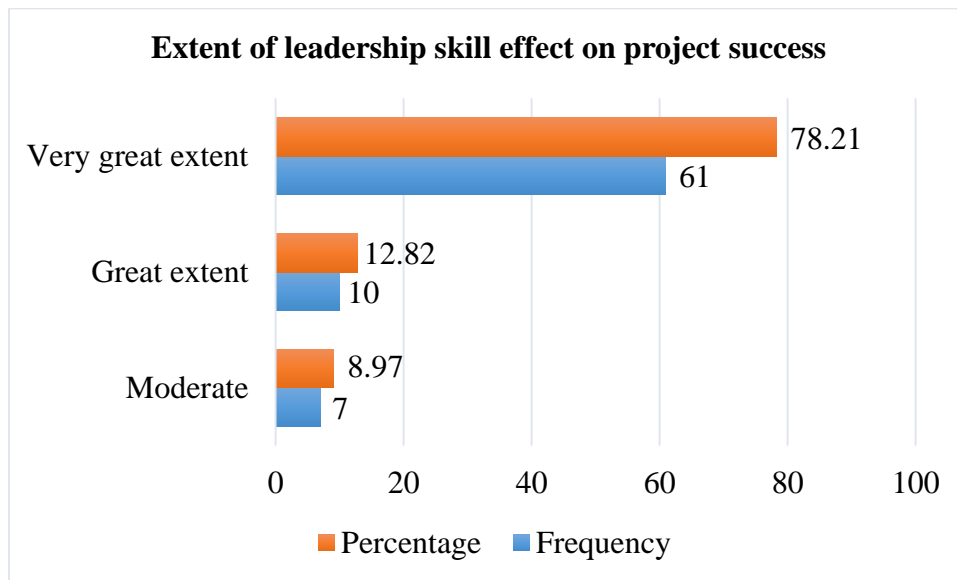
4.4.1.2. Leadership skills

As known leadership skill is one of leadership competencies a leaders expected and should to have, here in this part the effect of leadership skills are independently examined descriptively its effect on project success.

Respondents opinion on the effect of leadership skill on the success of Ethiopian Defense Construction Enterprise projects from the survey data (2020), the same exact results were found as of leadership style (i.e. *Table 4.1. Opinion on the effect of leadership style on project success*), finding indicates respondents from each of the three projects site recognize that leadership skill have great effect on the success of the project they are implementing. With all consensus replied project success indeed affected by leadership skill. This indicates leadership skill have great importance and can be applied by project leaders to improve the success of projects, Project leaders and teams' leadership skills should be utilized to the optimum and to the best in order to accomplish successful project implementation.

And *Figure 4.10* explains to what extent Ethiopian Defense Construction Enterprise project success could be affected by leadership skill of project employees.

Figure 4. 10 Extent of leadership skill effect on project success

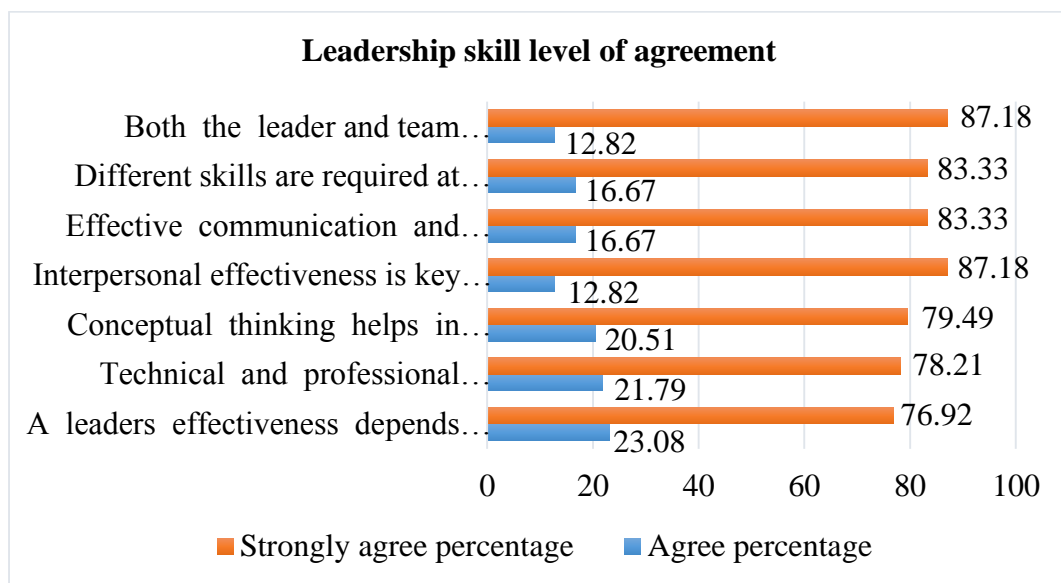


Source: Survey Data (2020)

Respondents response illustrated in the graph shows 78.21%, majority, of respondents certainly agreed in their response that Ethiopian Defense Construction Enterprise projects are exposed to be very greatly affected by leadership skills occupation of project employees. The compound effect, 91% in scale of great extent to very, depicted in the graph shows respondents makes no room for any uncertainty in their response. Respondents response affirm Rostagi (2000) claim that whenever qualified project employees equipped with technical, conceptual and relational skills the success rate of project will be higher.

Figure 4.11 demonstrates respondents’ responses to each statement of leadership skills. Even though level of agreement bases on five point Likert scale ranges from strongly disagree to strongly agree the graph illustrates percentage scale of agreement to each statements.

Figure 4. 11 Leadership skill level of agreement



Source: Survey Data (2020)

The graph asserts in all cases of the statements of leadership skill majority of respondents strongly agreed to it. Respondents definitely acknowledges, with no any scale of disagreements, the success of projects are also indeed dependent on skills of project employees. This means project employees’ technical expertise, conceptual, and relational capabilities to detect and solve problems have meaningful effect on project success of Ethiopian Defense Construction Enterprise.

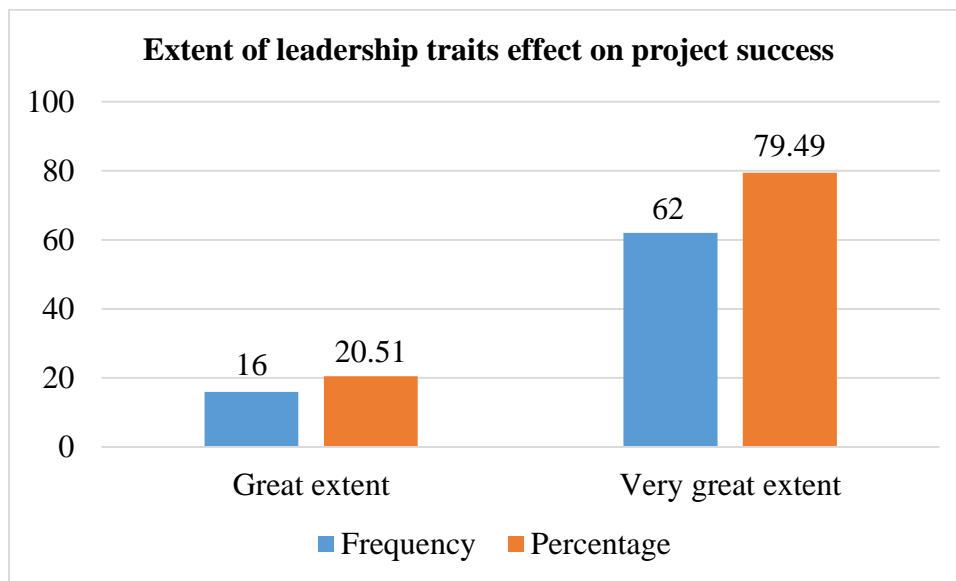
4.4.1.3. Leadership traits

Leadership traits are charismatic behaviors and values exhibited by leaders. From Dubrin (2010) and DSouza (1989) common traits displayed by leaders found to be trustworthiness, respect, responsibility, fairness, care, and citizenship.

Survey data (2020) shows the opinion of respondents on the effect of leadership traits on the success of projects of Ethiopian Defense Construction Enterprise, the same exact results were produced as of leadership style (i.e. *Table 4.1. Opinion on the effect of leadership style on project success*), every clusters of respondents were definitely positive project success comes with holistic personality manifested by leaders.

Below *Figure 4.12* explains to what extent Ethiopian Defense Construction Enterprise project success could be affected by leadership traits of project employees.

Figure 4. 12 Extent of leadership traits effect on project success



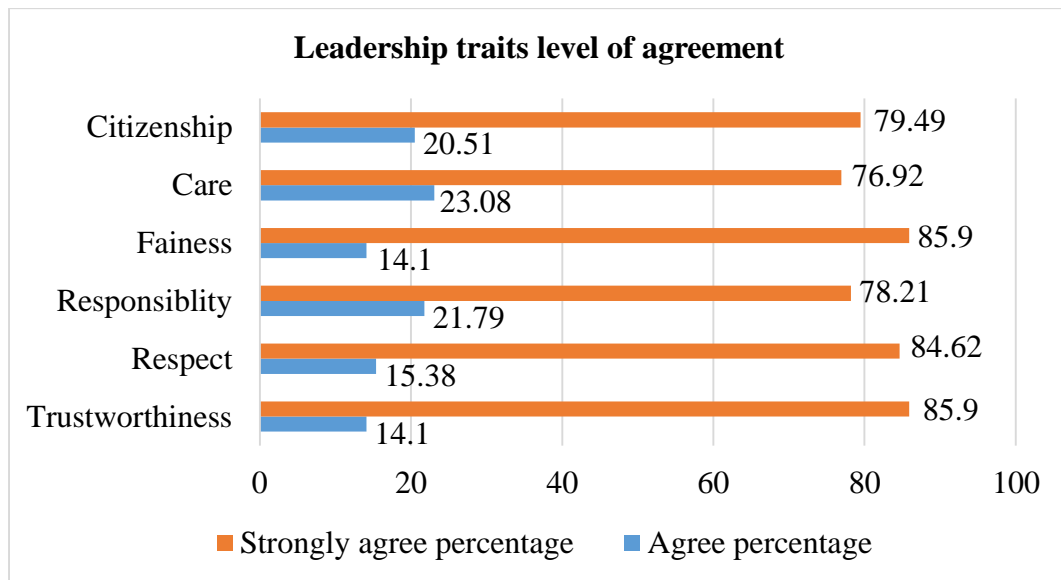
Source: Survey Data (2020)

The response with no ambiguity delivers majority, 79.49%, of the respondents says leadership traits have to very great extent effect on project success, while the remaining asserts, 20.51%, personality, values and beliefs of leaders indeed have to great extent effect on project success. The

sum of percentiles reveals there is consensus among respondent’s traits of leaders deeply affect project success.

Respondents level of agreement to characters of leadership traits were also measured, and that is what *Figure 4.13* below demonstrates. Even though level of agreement bases on five point Likert scale ranges from strongly disagree to strongly agree the graph illustrates percentage scale of agreement.

Figure 4. 13 Leadership traits level of agreement



Source: Survey Data (2020)

Respondents confidentiality in asserting their level of agreement responses to leadership traits clearly indicates in all cases of expected leader’s personality majority of them tend to strongly agree, in all cases above 75%, traits of leaders have significant effect on project success. The sum of percentiles of the two bars of the graphs even further amplifies their assertion were with no uncertainty.

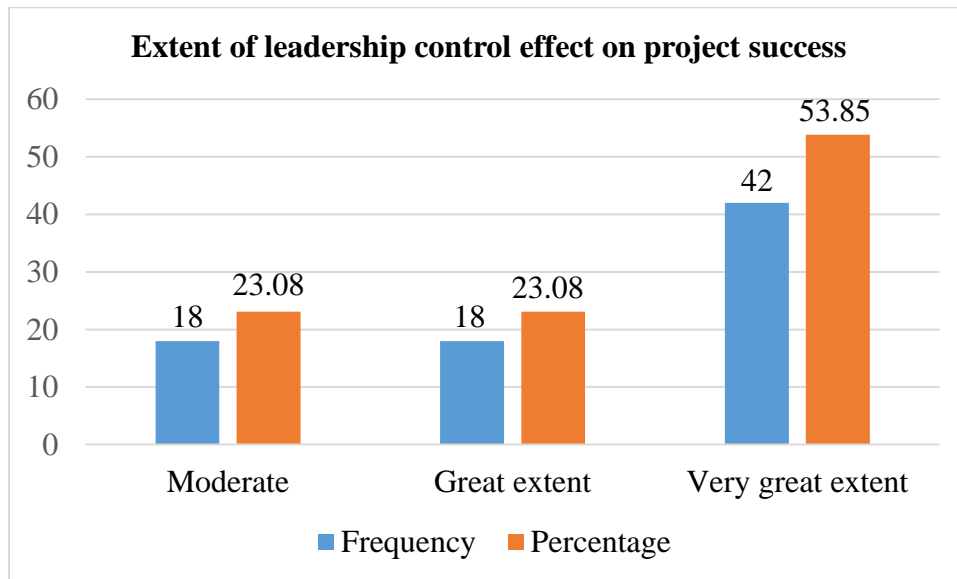
4.4.1.4. Leadership control

Leadership control involve to supervise project cycle activities from planning to monitor and evaluation with each stages of the project cycle support with feedbacks of project employees.

The opinion of respondents on the effect of leadership control on the success of projects of Ethiopian Defense Construction Enterprise from survey data (2020), the same exact results were produced as of leadership style (i.e. *Table 4.1*. Opinion on the effect of leadership style on project success), indicates all respondents were certain in their response the capability and skills of leaders to control project activities and scope affect projects success significantly.

The extent of leadership effect on success of Ethiopian Defense Construction Enterprise projects were analyzed and findings are shown in *Figure 4.14* and discussed below.

Figure 4. 14 Extent of leadership control effect on project success

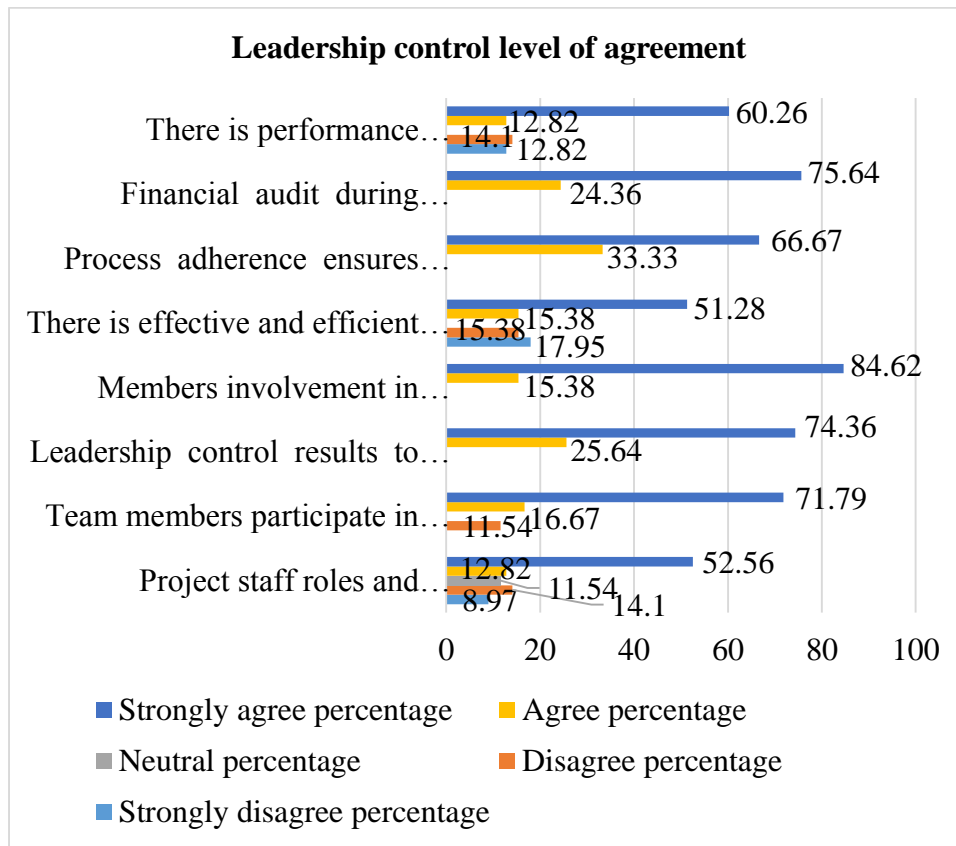


Source: Survey Data (2020)

With no any scale of disagreement with what so ever the cases are only 23.08% says leadership control affect project success to moderate extent. The majority of respondents, 53.85%, concludes leadership control competencies does have effect to the very great extent on projects. This percent have great implication when it is sum up with the percentile of great extent, 77%, to amplify the extent to which leadership control affect success of projects.

And below *Figure 4.15* shows the level of agreement responses of respondents for the effects of leadership control in project success to each statements.

Figure 4. 15 Leadership control level of agreement



Source: Survey Data (2020)

Scale of neutrality, 11.54%, response only confirmed on whether or not job description are clearly defined, which indicates there are little confusion on clarity of task responsibility. In half cases of the statements there are disagreements from the scale of flat disagreement to strong disagreement compound percentile less than 34%, which indicates there left work to do to revise performance appraisal of staff, proper resource utilization, team participation in control process, and task clarity to mitigate slow in achieving project success.

However, majority of respondents, percentile greater than 50%, in all cases of the statements join to strongly agree there are clarity in taking tasks, participation in control process, involvement in budget development, financial auditing, performance appraisal, and adherence to efficient resource utilization. Respondents response shows implementing such control result in successful projects. Responses asserts argument made by Redding (2002) strong leadership control competencies lead to ensure achievement of desired project outcomes.

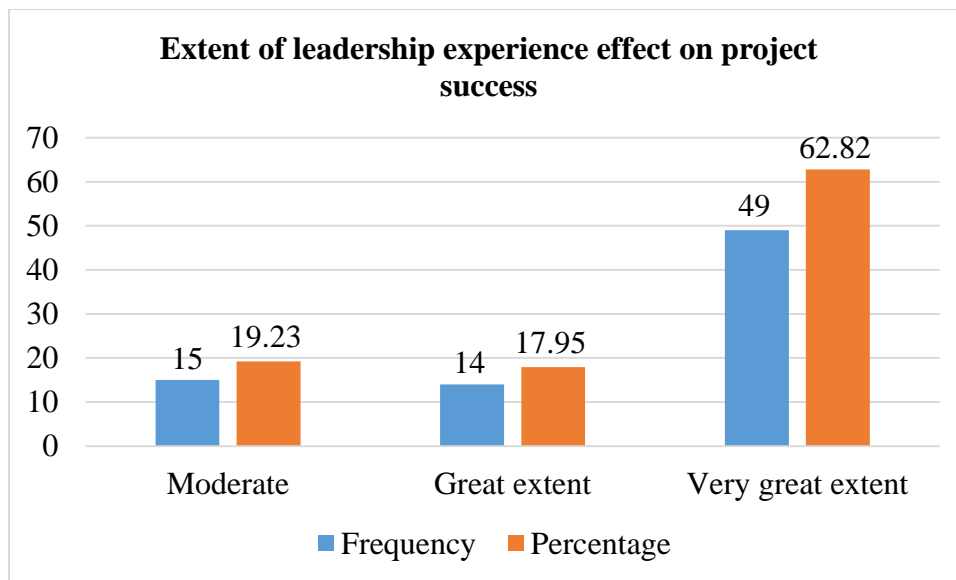
4.4.1.4. Leadership experience

Leadership experience refers to the accumulation of knowledge and skills through years of performing a certain task continually and repeatedly.

Regarding the opinion of respondents on the effect of leadership experience have on the success of projects of Ethiopian Defense Construction Enterprise from survey data (2020), the same exact results were produced as of leadership style (i.e. *Table 4.1.* Opinion on the effect of leadership style on project success), which indicates the availability of experienced project employees in Ethiopian Defense Construction Enterprise have great impact on the implementation of projects on which they involve in.

And concerning the assessment of the extent to which leadership experience affect projects success are indicated on *Figure 4.16* and explained below.

Figure 4. 16 Extent of leadership experience effect on project success



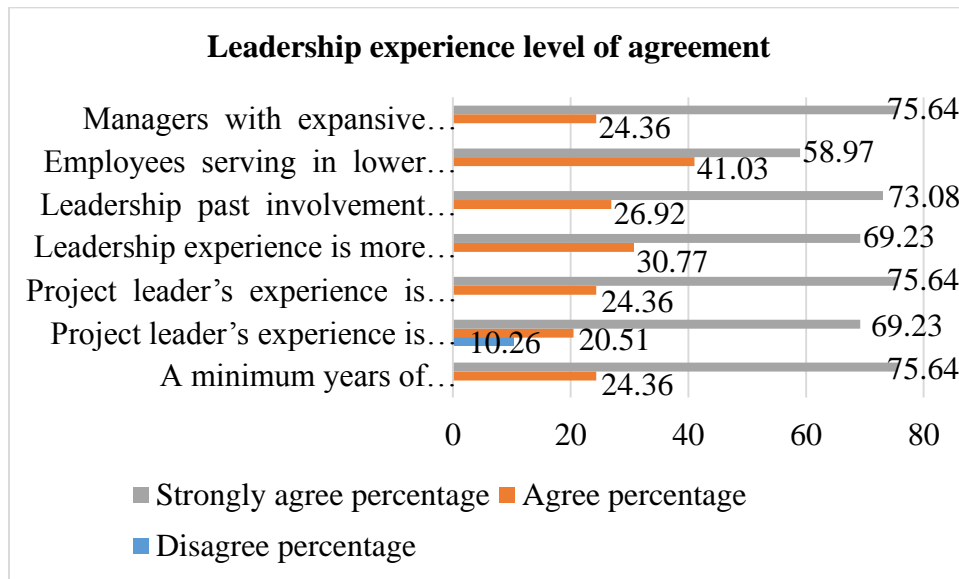
Source: Survey Data (2020)

When it comes to the extent of leadership experience effect on success of projects majority of respondents, 62.82%, claims leadership experience does have effect to the very great extent in the implementation of project activities, with no any scale of response below moderate. While 19.23% of respondent's response shows it has moderate effect on success of projects. The compound

percentile of response, 79.77%, on scale from great extent to very great extent indicates respondents does for certainly recognize leadership experience have significant effect on project success.

The level of agreements responses for statements stated under leadership experience are illustrated below in *Figure 4.17*.

Figure 4. 17 Leadership experience level of agreement



Source: Survey Data (2020)

Rastogi (2000) points to the fact that most specific job skills are learned from performing the work activities themselves. He goes on to argue that there is no perfect substitute for apprenticeship and for work experience itself. The graph show what has been claimed by Rastogi. As it shows majority of respondents, percentile greater than 55%, for each cases of the statements strongly agreed to argue leadership experience have greater impact on projects executed under Ethiopian Defense Construction Enterprise. Leaders past involvement and supervising experience in projects enhance quality of work, effective performance, completion of projects with in the constrained schedule. In the meantime, 10.26% of respondents argues for the cause of quality work could also be achieved through junior qualified project employees. In all, the graph vividly illustrates compounded majority, percentile greater than 90% for each statements on scale ranges from flat

agreement to strongly agree, of project employees affirm there is strong indication for leadership experience impact of project success.

Below *Table 4. 3* summarise the level of effect leadership competencies have on the success of projects of Ethiopian Defense Construction Enterprise.

Table 4. 3 Summary of leadership competencies

Leadership competencies	χ (Mean)	σ (Standard deviation)
Leadership styles	4.91	0.287
Leadership skills	4.961	0.193
Leadership traits	4.948	0.222
Leadership control	4.858	0.35
Leadership experience	4.833	0.375

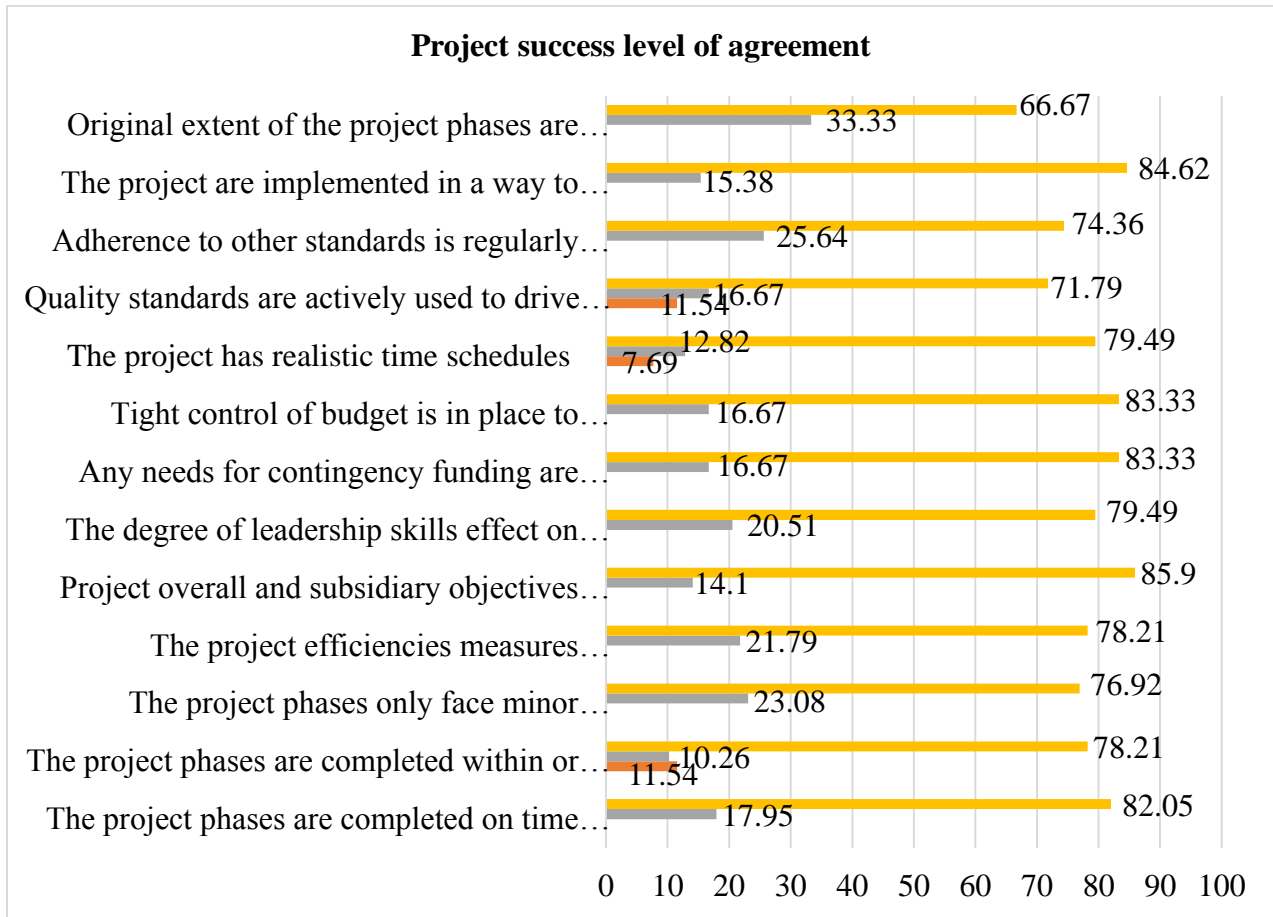
Source: Survey Data (2020)

The response of respondents shows in all level and in all cases leadership competencies have strong and great effect on project success. However, there is are slight difference in their level of effect. Leadership skill ($X = 4.961$, $\sigma = 0.193$) have the strongest effect on projects than the others leadership competencies. And the least leadership competency with strong effect on projects found to be leadership experience ($X = 4.833$, $\sigma = 0.375$). The others fall in between with either the higher the mean or the lower the standard deviation signify the significant effect they have on project success. *Table 4. 3* does not reveal the magnitude and directional relation each leadership competencies have with success of projects. This to be found with regression analysis.

4.4.2. Project success

Although there are a number of constraints that affect the success of any project, the sole purpose of this thesis work rests of on is leadership competencies constraint and examine its effect on project success. And *Figure 4.18* below demonstrates the level of agreement of respondents as to how projects success factors; time, cost, quality, and scope; affected by leadership competencies.

Figure 4. 18 Project success level of agreement



Source: Survey Data (2020)

Respondents, percentile less than 12% in flat disagreement, response reveals there are some compromises on quality, time, and budget on some occasions. However, the sum percentile, 88%, on those occasions majority of responses shows there are strong stance in project success factors. Respondents show no reluctant to time, cost, quality, and scope as in all cases of statements related to the project factors majority of respondents, percentile greater than 65%, affirms they strongly agree projects completed as per the realistic schedule with in or below the allocated budget with no or minor change in plan up to the standards of specifications dealt with stakeholders. Further they strongly argue there is tight budget control and allocate contingency budget, quality of works is up to the specification, all efforts driven to accomplish project success, and all elements of activities are toward delivering successful projects.

Table 4. 4 Project success in terms of leadership competencies

	χ (Mean)	σ (Standard deviation)
Project success	4.756	0.432

Source: Survey Data (2020)

The data reveals projects are under strong and excellent achievement of strategic objects regard to project factors. And this achievement is attributed to the high level of leadership competencies adopted and available within the project employees (Belout & Gauvreau, 2004).

4.5. Relationship between leadership competencies and project success

4.5.1. Hypothesis test

This section statistically examines basic hypothesis of the study. The study provides reliable evidence either to support or reject the premises relationship, the null hypothesis, established between each independent variables and dependent variable.

Table 4.5 illustrates classical hypothesis t tests of mean difference comparison between leadership competencies, independent variables, and project success, dependent variable.

Table 4. 5 Hypothesis test

	xd	Ha: diff < 0	Ha: diff != 0	Ha: diff > 0
L _{St} Ps	0.1025641	Pr(T < t) = 0.9473	Pr(T > t) = 0.1054	Pr(T > t) = 0.0327
Democratic	0.1923077	Pr(T < t) = 0.9997	Pr(T > t) = 0.0006	Pr(T > t) = 0.0003
Authoritative	0.0128205	Pr(T < t) = 0.5741	Pr(T > t) = 0.8519	Pr(T > t) = 0.4259
Laissez-faire	-0.0128205	Pr(T < t) = 0.4272	Pr(T > t) = 0.8545	Pr(T > t) = 0.5728
L _{Sk} Ps	0.2051282	Pr(T < t) = 0.9999	Pr(T > t) = 0.0002	Pr(T > t) = 0.0001
L _T Ps	0.1923077	Pr(T < t) = 0.9997	Pr(T > t) = 0.0006	Pr(T > t) = 0.0003
L _C Ps	0.1538462	Pr(T < t) = 0.9951	Pr(T > t) = 0.0097	Pr(T > t) = 0.0049
L _E Ps	0.0769231	Pr(T < t) = 0.8816	Pr(T > t) = 0.2369	Pr(T > t) = 0.0184

Source: Survey Data (2020)

Hypothesis 1o: There are no significant relationship between leadership styles and of project success.

The mean difference between leadership style and project success $x_d = 0.1025641$ works for alternative hypothesis $H_a: \text{diff} > 0$; $\Pr(T > t) = 0.0327$, which makes to reject null hypothesis for $\alpha < 0.05$. The finding suggests there is relevant and significant effect of leadership style on project success.

And yet again from *Table 4.5* among the three leadership style democratic leadership style found to be the most significant in its effect on project success, $x_d = 0.1923077$; $H_a: \text{diff} > 0$; $\Pr(T > t) = 0.0003$. This fact been supported by descriptive statistical research finding shows the extent and magnitude of democratic leadership style has been the most significant. Therefore, it can be said employee's participation in decision making process at any stage and life cycle of the project, project leaders guidance without pressure, supportive and frequent communication between project employees, leaders ability to support operational employees in delegating responsibility for them, and leaders support in helping project employees to find their career passion in project life does have positive and concrete effect on the success of projects.

Hypothesis 2o: There are no significant relationship between leadership skills and of project success.

The mean difference between leadership skill and project success $x_d = 0.2051282$ works for alternative hypothesis $H_a: \text{diff} > 0$; $\Pr(T > t) = 0.0001$, which makes to reject null hypothesis for $\alpha < 0.05$. The finding suggests there is relevant and significant effect of leadership skill on project success.

The finding lead to conclude leader's ability to solve multiple problems, expertise on technical and professional matters, conceptual thinking, interpersonal effectiveness, timely feedback, effective communication, and self-development indeed have positive and significant effect on the success of project.

Hypothesis 3o: There are no significant relationship between leadership traits and of project success.

The mean difference between leadership skill and project success $x_d = 0.1923077$ works for alternative hypothesis $H_a: \text{diff} > 0$; $\text{Pr}(T > t) = 0.0003$, which makes to reject null hypothesis for $\alpha < 0.05$. The finding suggests there is relevant and significant effect of leadership skill on project success.

Leaders core values and charisma such as their trustworthiness among coworkers, respect they are given and they reward to others, their ability to perform their own duty and delegate responsibility to others, how they fairly treat others, the extent of care they have to others and beyond project boundaries, and their sense of citizenship to the project they are assigned and to the organization in general does have positive and relevant effect on performance of project activities which lead to project success at the end of the day.

Hypothesis 4o: There are no significant relationship between leadership control and of project success.

The mean difference between leadership control and project success $x_d = 0.1538462$ works for alternative hypothesis $H_a: \text{diff} > 0$; $\text{Pr}(T > t) = 0.0049$, which makes to reject null hypothesis for $\alpha < 0.05$. The finding suggests there is relevant and significant effect of leadership control on project success.

Clearly defined project employee's roles and responsibilities, project employee's participation in project control process; their presence in pre implementation phase, implementation phase, and post implementation phase, effective and efficient utilization of project resources, tracking project progress, and performance appraisal of project employees definitely have positive and relevant effect on project success.

Hypothesis 5o: There are no significant relationship between leadership experience and of project success.

The mean difference between leadership experience and project success $x_d = 0.0769231$ works for alternative hypothesis $H_a: \text{diff} > 0$; $\text{Pr}(T > t) = 0.0184$, which makes to reject null hypothesis for $\alpha < 0.05$. The finding suggests there is relevant and significant effect of leadership experience on project success.

The above evidence lead to say project employee's minimum years of experience in project planning, supervision, and implementations indeed have positive and significant effect on project success.

Therefore, in general the statistical results of hypothesis tests show the mean difference of each of leadership competencies corresponding to project success are greater than zero, supports the results of column three of *Table 4.5*. The results $H_a: \text{diff} > 0$ are $\alpha < 0.05$ implying there is significant relationship between each independent variables and dependent variable. This allows to reject the null hypothesis at 95% level of confidence. Therefore, with 95% confidence the probability that the success of projects seeing with the 5 variables model is not due to random chance. Meaning there supposed to be solid and concrete relationship between leadership competencies and project success.

4.5.2. Correlation analysis

To test the association between independent variables and dependent variables correlation matrix was used. The study assessed the independent variables'; leadership style, skill, trait, control, and experience; effect on Ethiopian Defense Construction Enterprise projects success. The Pearson's correlation is given as: $-1 \leq r \leq +1$; where 0 to 0.29 is considered weak positive correlation; 0.3 to 0.49 is moderately positive correlation; and 0.5 to 1 corresponds to strong positive correlation. Conversely, 0 to -0.29 is considered weak negative correlation; -0.3 to -0.49 is moderately negative correlation; and -0.5 to -1 corresponds to strong negative correlation.

Table 4. 6 Correlation matrix

	Project success	Leadership style	Leadership skill	Leadership traits	Leadership control	Leadership experience
Project success	1					
Leadership style	0.5536* 0.0008	1				
Leadership skill	0.6724* 0.0016	0.0716 0.55335	1			
Leadership traits	0.5743* 0.0151	0.1815 0.1117	-0.0465 0.686	1		
Leadership control	0.3398* 0.0345	0.1882 0.0989	0.1705 0.1357	0.1304 0.2553	1	
Leadership experience	0.3271* 0.0456	0.1309 0.2532	-0.0884 0.4361	0.2080 0.0677	-0.1404 0.2201	1
* significant at 0.05 level of significance						

Source: Survey Data (2020)

As presented in *Table 4.6*, it was observed that there was a direct positive relationship between the dependent variable and all the independent variables. Leadership skill was observed to significantly have the strongest positive correlation with projects success ($r = 0.6724^*$, $p = 0.0016$). There was also significantly strong positive relationship between leadership traits, leadership style and success of projects in Ethiopian Defense Construction Enterprise ($r = 0.5743^*$, $p = 0.0151$ and $r = 0.5536^*$, $p = 0.0008$). There was observed a moderate positive relationship between leadership control, leadership experience and projects success ($r = 0.3398^*$, $p = 0.0345$ and $r = 0.3271^*$, $p = 0.0456$).

In analytical hierarchical process analysis, the correlation be summarized, leadership style (0.5536) and leadership trait (0.5743) have nearly the same prediction capacity to the success of projects. Leadership skill (0.6724) taken as two times predictor independent variable to predict the effect of leadership competency in project success of Ethiopian Defense Construction Enterprise than leadership control (0.3398) and leadership experience (0.3271). And leadership control and leadership experience also have nearly the same prediction capability in determining the success of projects.

4.5.3. Normality test

The statistical normality of distribution of variables assessed by in combination of Skewness-Kurtosis and Shapiro-Wilks normality test. For Skewness-Kurtosis $S_k = 0$ gives perfectly distribution, $S_k \leq -1$ or $S_k \geq 1$ the distribution is highly skewed, $-1 < S_k < 0.5$ or $0.5 < S_k < 1$ the distribution is moderately distributed, and $-0.5 < S_k < 0.5$ the distribution is approximately symmetric.

Table 4. 7 Normality test

Variables	Pr (Skewness)	Pr (Kurtosis)	Prob > Z
Project success	0.0001	0.2569	0.01561
Leadership style	0.0001	0.0047	0.0001
Leadership skill	0.0001	0.0001	0.0001
Leadership trait	0.0001	0.0001	0.0001
Leadership control	0.0001	0.0001	0.0001
Leadership experience	0.0001	0.0456	0.0005

Source: Survey Data (2020)

As indicated in *Table 4.7* for all the variables ($\text{Pr } S_k = 0.0001$), the dependent and independents, tells the skewness's are in between $-0.5 < S_k < 0.5$ for which the data set are not normally distributed so the distribution considered to be approximately symmetric distribution of variables to their means. And yet again all the explanatory variables and outcome variable are $\text{Pr } SW < 0.05$ thus the test rejects the hypothesis of the normality. This allow to state with 95% confidence the data does not fit the normal distribution, therefore, all thesis hypothesis is all rejected. This indicates there is significant level of relationship between the independent variables and the dependent variable.

4.6. Effect of project competencies on project success

The study seeks to establish the relationship between leadership style, skill, trait, control, and experience (independent variables) and Ethiopian Defense Construction Enterprise projects success (dependent variable) to addresses the issues of research questions.

Therefore, multiple linear regression performed based on the following model;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Whereby: Y = Project success

X₃= Leadership Trait (L_T)

X₁= Leadership Style (L_{St})

X₄= Leadership Control (L_C)

X₂= Leadership Skill (L_{Sk})

X₅= Leadership Experience (L_E)

While $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are coefficients of X_i variables, β_0 constant, and ε is the error term.

Table 4. 8 Multiple regression

Source	SS	Df	MS
Model	5.29008	5	1.05802
Residual	9.08172	72	0.12613
Total	14.3718	77	0.18665

Number of obs = 78	R-squared = 0.3681
F (5,72) = 8.39	Adj R-squared = 0.3242
Prob > F = 0.0000	Root MSE = 0.35515

Project success	Coef.	Std. Err.	t	p>/t/	Beta
Leadership style	0.3667	0.11737	3.12	0.003	0.29733
Leadership skill	0.70348	0.21469	3.28	0.002	0.31517
Leadership trait	0.38907	0.18956	2.05	0.044	0.19993
Leadership control	0.28302	0.14614	1.94	0.057	0.18845
Leadership experience	0.23711	0.11284	2.1	0.039	0.20586
Cons	-4.9768	1.58101	-3.15	0.002	

Source: Survey Data (2020)

Regression diagnostic test performed to evaluate the measurement model for multi collinearity and results from the analysis suggested that the variables used in the research were reliable ($R^2 = 0.3681$, $F = 8.39$, $p = 0.0001$) and the measurement model was valid and good fitting ($r = 0.60671$, $p = 0.0001$) implying that the overall regression model is significant.

The model shows out of 14.3718 variation the model explained 5.29008 variation using 5 independent variables (leadership competencies). The 5 independent variables explain 36.81% of

the variation in the dependent variable (project success). The fact that the value of MSE (0.186665) is very low shows the model is fitting good model.

The model summary table reports the strength of the relationship between the model and the dependent variable. R, the multiple correlation coefficient, is the linear correlation between the observed and model-predicted values of the dependent variable. There is a strong relationship between the observed and model-predicted values of the dependent variable ($R = 0.60671$). Further, 36.81% the observed variation in projects success (dependent variable) is explained by leadership style, leadership skill, leadership trait, leadership control, and leadership experience (independent variables) as shown in the table. The implication is that 63.19% per cent of the changes in project success can be attributed to other factors (Rad, 2003); (Cook, 2004) ;(Hughes, Tippett, & Thomas, 2004).

The result of Stata test shows that the F value 8.39 with a significance of p value = 0.0001 which was less than p value = 0.05, meaning that there is a significant relationship between leadership style, leadership skills, leadership trait, leadership experience, leadership control and project success of Ethiopian Defense Construction Enterprise. Therefore, with 95% confidence the probability that the success of projects seeing with the 5 variables model is not due to random chance. This shows that the overall model was statistically significant at 5% significance level.

From standard beta weight a one standard deviation increase in the independent variables is associated with a standard beta weight percentage of standard deviation increase or decrease in the dependent variable.

A one standard deviation unit in leadership style which equals to $\sigma = 0.287$ an extra standard deviation of leadership style is associated with $\beta = 0.29733$ standard deviation increase in project success, which is $0.432 * 0.29733 = 0.128$, so an increase in leadership style to 0.287 is associated with increase in project success equals to **0.128**.

For leadership skill a standard deviation equals to $\sigma = 0.193$ an extra standard deviation is associated with $\beta = 0.31517$ standard deviation increase in project success, which is $0.432 * 0.31517 = 0.136$, so an increase in leadership skill to 0.193 is associated with increase in project success equals to **0.136**.

For leadership trait a standard deviation equals to $\sigma = 0.222$ an extra standard deviation is associated with $\beta = 0.19993$ standard deviation increase in project success, which is $0.432 * 0.19993 = 0.089$, so an increase in leadership trait to 0.222 is associated with increase in project success equals to **0.089**.

For leadership control a standard deviation equals to $\sigma = 0.35$ an extra standard deviation is associated with $\beta = 0.18845$ standard deviation increase in project success, which is $0.432 * 0.18845 = 0.086$, so an increase in leadership control to 0.35 is associated with increase in project success equals to **0.086**.

And finally for leadership experience a standard deviation equals to $\sigma = 0.375$ an extra standard deviation is associated with $\beta = 0.20586$ standard deviation increase in project success, which is $0.432 * 0.20586 = 0.081$, so an increase in leadership control to 0.375 is associated with increase in project success equals to **0.081**.

Therefore, from standardized beta weight analysis the effect of leadership skill in project success of Ethiopian Defense Construction Enterprise found to be much more significant than the others leadership competencies being followed by leadership style. Next to the above two competencies comes leadership trait followed by leadership control. And finally leadership experience has the least effect on the success of projects among the leadership competencies.

The regression model formula is;

$$Y = -4.9768 + 0.3667X_1 + 0.7035X_2 + 0.3891X_3 + 0.283X_4 + 0.2371X_5$$

The regression model provides statistical control through which the study established the effect of each predictor independent variables. Holding all variables at zero gives result in a negative success of Ethiopian Defense Construction Enterprise projects equal to -4.9768. In a similar way, reducing all other independent variables to zero, a unit change in leadership style gives result in 0.3667 increments in positive success of projects. The findings indicate 0.7035 increments in success of projects when all other independent variables are reduced to zero with only a unit change in leadership skill, while a unit change in leadership trait while holding the rest of independent variables constant would lead to a 0.3891 increments in favorable success of projects, still while a unit change in leadership control while holding the rest of independent variables constant would

lead to a 0.283 increments in favorable success of projects . Finally, a unit change in leadership experience yield 0.2371 increments in success of project when all other predictor independent variables are held constant at zero. The results also show that the coefficients for each variable are non-zero. This therefore means that all the independent variables affect the dependent variable. And again since the p-values (i.e. *Table 4.6.*) for leadership style, leadership skill, leadership trait, leadership control, and leadership experience are less than 0.05, these independent predictors are very significant in predicting the dependent variable.

CHAPTER FIVE

SUMMARY, LIMITATIONS, CONCLUSIONS, RECOMMENDATIONS, AND SUGGESTIONS

5.1. Introduction

This chapter gives the summary of the major findings, limitations, recommendations, suggestions, and finally conclusions.

5.2. Summary

The summary concisely and precisely report whether or not research objectives, either null hypothesis is rejected or accepted based on research facts, attained in this thesis paper.

The purpose of the study was to establish the effect of leadership competencies in project success of Ethiopian Defense Construction Enterprise, Addis Ababa, Ethiopia. The study adopted an explanatory research design with a target population of 126 from which a sample size of 88 respondents was selected through proportional random clusters using Krekel and Morgan scale. Data was collected by use of questionnaires and analyzed by use of qualitative and descriptive statistics through the use of Stata models output at 95% level of confidence.

The research finding results introduce leadership competencies; leadership style, leadership skill, leadership trait, leadership control and leadership experience; indeed, have from moderate positive correlation to strong positive correlation (i.e. *Table 4.6*) to project success of Ethiopian Defense Construction Enterprise projects. The linear regression model data indicates the explanatory variables explains 36.81% of the outcome variable, the model is good fitting model with 60.67%, the probability that the independent variables have significant effect on project success is at P value 0.0001 of random chance alone implying that the overall regression model is significant.

The P values of individual independent variables (i.e. *Table 4.6*) is less than $\alpha = 0.05$ and their coefficients of the mathematical model are all positive (i.e. *Table 4.8*). The null hypothesis is rejected based on the research facts with 95% level of confidence (i.e. *Table 4.5*). The results were

supported by the analysis of normal distribution of variables, the graph doesn't follow normal distribution curve (i.e. *Table 4.7*).

From the study findings, it can be summarized that all five of leadership competencies indeed have positive and significant effect on project success of Ethiopian Defense Construction Enterprise at different level of degree. Of the five leadership competencies, the findings indicated that leadership skills had highest effect on the success of projects, and leadership experiences had the least effect on the success of projects. Leader's leadership trait has second greatest effect on success of projects and then on the third place leadership style has a significant effect on projects success, took third place. The study established that control had the fourth greatest effect on success of projects (i.e. *Table 4.8*).

5.3. Limitations of the study

The respondents approached were reluctant in giving information fearing that the information would be used to intimidate them or print a negative image about them or the organization. Some respondents had a negative attitude and were unwilling to fill in the questionnaires.

However, the researcher obtained an introductory letter from the university that assured the respondents that their information would be used for academic purposes only. In addition, the researcher shared a confidentiality statement with the respondents. Project employees involved in project implementation operates on tight schedules; respondents are not able to complete the questionnaire in good time and this might overstretch the data collection period. To mitigate this limitation, the researcher persuaded targeted respondents to fill up and return the questionnaires on constrained time gap.

5.4. Conclusions

The concepts and theories of leadership are without argument immense. The focus of this research is to offer valuable empirical information along with a combination of substantial quantitative and qualitative that will add merit to current practices of leadership competencies used in project management. This study reinforces the critical factors that are extremely necessary to successfully execute unique and complex projects for current project manager, project team case leaders,

consultants, design and inspection managers, project engineers, and other practitioners in the field of project management. The proposed leadership competencies in each hypothesis are a product manufactured from various academic literatures. These critical leadership competencies are not a direct formula for success; instead they are a guideline that if used effectively can produce significant positive results.

The concepts and competencies of leadership are highly intriguing and definitely provide a new perspective on not only to become an effective leader but a high contributor that inspires and adds value to any projects. In essence, leadership is a key element that must be exercised in any projects in order to achieve a particular outcome or objective. The actions and direction that a project employee decides to take is extremely critical for the level of cooperation and the performance he/she will receive from his/her project team members.

Ultimately and ideally, the actions of a leader should be exercised by a project employees in every phase of a project, project employees should be knowledgeable the effectiveness and efficiency of leadership styles, value and properly utilize influential skills and experienced project members, acknowledge and appreciate the diversification of individuals traits and properly manage it, implement and practice appraisal of performance, and effectively control the progress of projects progress and success rate in main phases of the projects; pre-implementation, implementation, and post implementation.

Project leaders are no longer simply classified in the role of the “Boss” but rather are individuals of unique and extraordinary characteristics. A project leader thrives in any environment and seeks out the best of people, is unafraid to take risks and minimize failure. The end goal to achieve effective leadership in project management and project success is definitely a long journey that is filled with obstacles, challenges but at the same time it is full of great opportunities and remarkable experiences. The path towards becoming a great project leader in the field of project management entails courage, passion, perseverance, wisdom, patience and selflessness. Project management demands project leaders with high levels of diverse skills in order to cope with the extreme mandates of the job, such as managing resources, supervising people, schedule timelines, negotiate contracts and so on.

To summarize, in consideration of all factors aforementioned, the main conclusion is that project leadership styles, skills, traits, control and experience must become a natural practical act in every task performed by project employees; the result would lead to significant improvements in projects performance and highly productive levels in project environments. One important point to highlight is that projects can only be as successful as the abilities of the project employees. The actions and behaviors of the project employees have an equally parallel effect on the project, therefore project employees must be knowledgeable, professional and continuously learning and evolving.

5.5. Recommendations

Projects are unique and complex in their nature. Thus this study recommends the adoption and application the mix of best of leadership competencies. Due to the fact that human behaviors on how to govern and to be governed, and project behaviors might force to come up with the right leadership style. The study recommends that Ethiopian Defense Construction Enterprise should use democratic style of leadership (i.e. *Table 4.2*), involves employees in decision making with the leader providing supportive communication.

The study suggests emphasis be given to project leadership traits of project employees. The right virtue of project employees gives assurance on team cooperation and coexistence among teams at different level of management. The study also recommends introduction of effective controls of project life cycle from its initiation to its closing; including processes and procedures, having a clear set of objectives and well defined staff roles and responsibilities, member involvement in project activities and having a means of measuring performance which are all geared towards ensuring effective and efficient utilization of resources and achieving satisfactory success of projects. To meet set objectives of project success are attained effectively and efficiently the study also recommends emphasis should be given to experiences. The minimum required years of experience the project employees reflects the assurance of achieving project objectives.

In conclusion, in the same context, Ethiopian Defense Construction Enterprise can substantially benefit from supporting their project employees to develop as leaders. And any organization that operates in project environment should encourage and invest in project leadership training and

strive to create a leadership culture; this will allow project employees to enhance and develop more efficient leadership competencies. By creating an atmosphere that promotes personal and professional growth organizations would be seeding the grassroots for highly loyal and resourceful project employees. Ultimately, project employees would be more productive in terms of completing milestones, keeping project on budget, time, quality, scope and thus becoming invaluable contributing assets to the organization.

5.6. Suggestions to future researchers

Since this study investigates five of leadership competencies, which are leadership style, leadership skill, leadership trait, leadership control and leadership experience on one governmental institution. The study suggests; One, future researchers should examine 63.19% of other factors which attributes to project success. Secondly, other additional governmental and private institutions should be inclusively studied to make the conclusion relevant and comprehensively applicable. At last, inclusive study of project beneficiaries should be investigated from their perspective.

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APPENDIXES

Appendix I. Krejcie & Morgan (1970) Table

N=Population	S=Sample size
10	10
15	14
20	19
25	24
30	28
35	32
40	36
45	40
50	44
55	48
60	52
65	56
70	59
75	63
80	66
85	70
90	73
95	76
100	80
110	85
130	97
140	103
150	106
160	118
170	123
180	127
190	133
200	136
210	140
220	144
230	148
240	152
260	155
270	159
280	162
290	165

Appendix II: Survey Questionnaire



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The researcher who is carrying out this survey is a student at St. Mary's university school of graduate studies, participating in a graduate program in the field of Master of Business Administration in General Management as partial fulfillment of the requirement for the completion of the program on the research topic "The Effect of Leadership Competencies on Project Success, In The Case of Ethiopian Defense Construction Enterprise, Addis Ababa".

The questioner consists of 28 items and is evaluated on five-point scale. Respondents rate how friendly they or their leader display each item on a scale of 1-5 whenever appropriate.

I have designed and ask all the questions only for academic purpose you fill and heartedly cooperation in responding the questionnaires is to achieve the designed objective. Please, note that all the information given shall be purely used for academic purposes and shall be treated as strictly confidential in data analysis, the answer from all respondents will be combined anonymously and no reference will be made to individual's response in particularly. Therefore, fell free in responding to the best of your knowledge and perception to realize the objective of this study. Thank you in advance for taking your time to complete the questionnaire and for your cooperation.

Part A: Demographic Information

1. Gender of the respondent

Male Female

2. Age of the respondent

Below 20 years 21-30 years 31-340 years 41 and above years

3. Level of education

Secondary College diploma Degree Post graduate

4. Length of service

0-1 year 2-4years 5-7 years 8 years and above

5. Work position

Engineer Design & inspection Consultant Project team case leader Project manager

Part B: Leadership Style

6. In your opinion does leadership style affect project success of Ethiopian Defense Construction Enterprise?

Yes () No ()

If yes explain

.....
.....

7. To what extent does leadership style affect project success of Ethiopian Defense Construction Enterprise?

Very great extent () Great extent () Moderate extent () Little extent () Not at all ()

8. Indicate your level of agreement with the following statements relating to the effect of leadership styles on project success of Ethiopian Defense Construction Enterprise.

where 1=Strongly disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly agree

Statement	1	2	3	4	5
Democratic Leadership Style					
Employees want to be part of the decision making process					
Providing guidance without pressure is the key to being a good leader					
Most workers want frequent and supportive communication from their leader					
Leaders need to help subordinates accept responsibility for completing their work					
It is the leaders responsibility to help subordinates in finding their passion					
Authoritative Leadership Style					
Employees need to be supervised closely otherwise they are not able to do their Job					
It is fair to say that most employees are lazy					
Employees must be given rewards and punishments in order to motivate them to do their jobs					
Most employees feel insecure and need direction in their jobs					
The leader is the chief judge to the achievement of the members in the group					
Effective leaders give orders and clarify procedures					
Laisses- Faire Leadership Style					
Leaders should let subordinates work problems on their own					
Leadership involves staying out of the way as subordinates do their work					
Leaders should allow their subordinates to appraise their work					
In most situations, workers prefer little input from their leader					
In general, it is best to leave subordinates alone					

9. Which of the 3 leadership styles is more effective to spearhead successful project?

Democratic () Authoritative () Laisses-faire ()

10. Indicate other ways through which leadership style may affect project success of Ethiopian Defense Construction Enterprise.

.....

Part C: Leadership Skills

11. In your opinion do leadership skills affect project success of Ethiopian Defense Construction Enterprise?

Yes () No ()

If yes explain

.....

.....

12. Indicate your level of agreement with the following statements relating to the effect of leadership skills on project success of Ethiopian Defense Construction Enterprise.

where 1=Strongly disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly agree

Statement	1	2	3	4	5
A leaders effectiveness depends on the ability to solve multiple problems					
Technical and professional expertise is crucial to the success of a Project					
Conceptual thinking helps in detecting problems and patterns resulting to successful projects					
Interpersonal effectiveness is key in accomplishing project goals and Objectives					
Effective communication and timely feedback leads to high performing teams					
Different skills are required at different levels of management with conceptual skills at the top, people skills at the middle and technical skills at the lower levels					
Both the leader and team members need to take self-development courses in order to work properly					

13. Indicate other ways through which leadership skills may affect project success of Ethiopian Defense Construction Enterprise.

.....

.....

14. In your own opinion, indicate the extent to which leadership skill affect project success of Ethiopian Defense Construction Enterprise.

Very great extent () Great extent () Moderate extent () Little extent () Not at all ()

Part D: Leadership Traits

15. In your opinion does leadership traits affect project success of Ethiopian Defense Construction Enterprise?

Yes () No ()

If yes explain

.....

.....

16. To what extent does leadership traits affect project success of Ethiopian Defense Construction Enterprise?

Very great extent () Great extent () Moderate extent () Little extent () Not at all ()

17. Indicate your level of agreement with the following leader's behavior relating to the effect of leadership traits on project success of Ethiopian Defense Construction Enterprise.

where 1=Strongly disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly agree

Traits	1	2	3	4	5
Trustworthiness					
Respect					
Responsibility					
Fairness					
care					
Citizenship					

18. Indicate other ways through which leadership style may affect project success of Ethiopian Defense Construction Enterprise.

.....

Part E: Leadership Control

19. In your opinion does leadership control affect project success of Ethiopian Defense Construction Enterprise?

Yes () No ()

If yes explain

.....

20. To what extent does control affect t project success of Ethiopian Defense Construction Enterprise?

Very great extent () Great extent () Moderate extent () Little extent () Not at all ()

21. Indicate your level of agreement with the following statements relating to effect of leadership control on project success of Ethiopian Defense Construction Enterprise.

where 1=Strongly disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly agree

Statement	1	2	3	4	5
Project staff roles and responsibilities are clearly defined					
Team members participate in projects control processes					
Leadership control results to better quality management during project implementation					
Members involvement in budget development and time estimation motivates them and lead to achievement of Project goals.					
There is effective and efficient utilization of project resources					
Process adherence ensures satisfactory progress in implementation of projects					
Financial audit during project implementation positively influence project completion within the project budget					
There is performance measurement and appraisal of staff					

22. Indicate other ways through which leadership control may affect project success of Ethiopian Defense Construction Enterprise.

.....

Part F: Leadership Experience

23. In your opinion does leadership experience affect project success of Ethiopian Defense Construction Enterprise?

Yes () No ()

If yes explain

.....

24. To what extent does leadership experience affect project success of Ethiopian Defense Construction Enterprise.

Very great extent () Great extent () Moderate extent () Little extent () Not at all ()

25. Indicate your level of agreement with the following statements relating to the effect of leadership experience on project success of Ethiopian Defense Construction Enterprise.

where 1=Strongly disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly agree

Statement	1	2	3	4	5
A minimum years of experience of a project leader is required for implementation					
Project leader's experience is reflected by the quality of work					
Project leader's experience is important for planning and supervising projects execution					
Leadership experience is more desirable for effective performance					
Leadership past involvement leads to effective performance of projects within the budgets					
Employees serving in lower supervisory job first before moving to managerial positions enhance project quality					
Managers with expansive experience are better placed to implement projects within the timelines					

26. Indicate other ways through which leadership experience affect project success of Ethiopian Defense Construction Enterprise.

.....

Part G: Project Success

27. Indicate your level of agreement with the following statements relating to the effect of leadership competencies on project success of Ethiopian Defense Construction Enterprise.

where 1=Strongly disagree, 2= Disagree 3= Neutral, 4= Agree, 5= Strongly agree

Statement	1	2	3	4	5
The project phases are completed on time or earlier					
The project phases are completed within or below budget					
The project phases only face minor changes in plan					
The project efficiencies measures effectively achieved					
Project overall and subsidiary objectives are not in conflict					
The degree of leadership skills effect on project time is extremely high than leadership experience					
Any needs for contingency funding are recognized from the start					
Tight control of budget is in place to ensure that the values of available funding is maximized					
The project has realistic time schedules					
All direct and indirect suppliers are aware of project needs, schedules, and quality standards					
Quality standards are actively used to drive quality of outputs					
Adherence to other standards is regularly monitored in order to ensure delivery is to best practice levels					
The project are implemented in a way to achieve strategic objectives					
Original extent of the project phases are being completed and all elements of the project are delivered					

28. Indicate other ways through which each leadership competencies affect each project success constraints of Ethiopian Defense Construction Enterprise.

.....

.....*Many thanks in advance for your time and cooperation*.....