JIMMA UNIVERSITY
JIMMA INSTITUTE OF TECHNOLOGY
SCHOOL OF GRADUATE STUDIES
FACULTY OF CIVIL AND ENVIRONMENTAL ENGINEERING
CONSTRUCTION ENGINEERING AND MANAGEMENT CHAIR

INVESTIGATION OF CONSTRUCTION LEADERSHIP EFFECTIVENESS ON THE PERFORMANCE OF BUILDING CONSTRUCTION PROJECTS: A CASE OF HAWASSA CITY

A Thesis submitted to School of Graduate Studies, Jimma University, Jimma Institute of Technology, Faculty of Civil and Environmental Engineering in Partial Fulfillment of the Requirements for the Degree Master of Science in Construction Engineering and Management

by

Jemal Seid Hussen

January 2022
Jimma, Ethiopia

JIMMA UNIVERSITY
JIMMA INSTITUTE OF TECHNOLOGY
SCHOOL OF GRADUATE STUDIES
FACULTY OF CIVIL AND ENVIRONMENTAL ENGINEERING
CONSTRUCTION ENGINEERING AND MANAGEMENT CHAIR

INVESTIGATION OF CONSTRUCTION LEADERSHIP EFFECTIVENESS ON THE PERFORMANCE OF BUILDING CONSTRUCTION PROJECTS: A CASE OF HAWASSA CITY

A Thesis submitted to School of Graduate Studies, Jimma University, Jimma Institute of Technology, Faculty of Civil and Environmental Engineering in Partial Fulfillment of the Requirements for the Degree Master of Science in Construction Engineering and Management

Advisor: Engr. Bien Mercado Maunahan SIGNATURE _____

Co-Advisor: Engr. Kemal Ture SIGNATURE _____

January 2022
Jimma, Ethiopia

DECLARATION

I declare that this research entitled "Investigation of Construction Leadership Effctiveness on the Performance of Building Construction Projects: A Case of Hawassa City" is my original work and has not been submitted as a requirement for the award of any degree in Jimma University or elsewhere.

Jemal Seid Hussen	_____	_____
NAME	SIGNATURE	DATE

As research Adviser, I hereby certify that I have read and evaluated this thesis paper prepared under my guidance by Jemal Seid Hussen entitled "INVESTIGATION OF CONSTRUCTION LEADERSHIP EFFCTIVENESS ON THE PERFORMANCE OF BUILDING CONSTRUCTION PROJECTS: A CASE OF HAWASSA CITY" and recommend and would be accepted as a fulfilling requirement for the Degree of Master of Science in Construction Engineering and Management.

Advisor: Engr. Bien Mercado Maunahan	_____	_____
NAME	SIGNATURE	DATE
Co - Advisor: Engr. Kemal Ture	_____	_____
NAME	SIGNATURE	DATE

ABSTRACT

Nowadays, building construction industries are boosting globally, so proper leadership practice for the better performance of projects is needed. The objectives of this study were; to assess the current practice of construction leadership and the level of effectiveness in building construction projects at Hawassa town, to assess the key success factors on construction leadership that can affect the performance of construction projects, and to assess the effects of poor construction leadership on the performance of the building constructions projects and possible recommendations to improve the existing practice. The literature review and questionnaire survey were used to collect the necessary data to address these objectives. The *relative importance index (RII) method was adapted to find the most significant practices, success factors, and effects on the performance of construction projects, and the values obtained from the questionnaire were analyzed through Microsoft excel software. Mean scores were also used to show the rankings with graphs. Whereas the validity and reliability of questionnaires were checked by Cronbach's Alpha using Statistical Package for the Social Sciences. Accordingly, from those eighty practices or skills that were studied under twelve groups, the research identified five major problem areas on the practice of construction leadership in construction projects and those were time management, conflict resolution, problem-solving and Informed Judgment, integrity and ineffectiveness on communication were ranked depending on their average RII values 0.742, 0.727, 0.730, 0.721 and 0.719 respectively. Twenty-nine factors that affect construction projects' success were divided into four categories. From those major success factors project managers related, supervisors' competency, Project management, and project teams were ranked depending on their average RII values 0.772, 0.751, 0.746, and 0.743, respectively. The study also indicated decreased productivity, a lower level of skill of project manager to execute projects, and failure to improve health and safety were other effects in projects due to lack of proper leadership practices throughout the projects that affect the performance of construction projects. The remedial measures were determined to improve time management culture, skilled and competent professionals should join the industry, periodic training sessions regarding leadership should be given, and implement a performance management system at the individual and project level to ensure dependable planning and controlling system and so on. Generally, all parties participating in building construction projects must contribute their rightful parts towards establishing better leadership practices on projects.*

Keywords: *Construction leadership, Project management, Project manager, Project performance*

ACKNOWLEDGEMENT

First and foremost, I would like to thank the almighty God for giving me the strength to trudge on despite the various difficult times. This Thesis has become a reality due to many individuals' generous help and support; it is my pleasure to acknowledge and thank them for their contributions. I sincerely thank my advisors, Engr. Bien Mercado Maunahan and co-advisor Engr. Kemal Ture for their time and effort in providing valuable critics and guidance on my work.

Finally, I would like to give my many thanks to all of them who took part in the questionnaire, both from contractors and consultant's office, and to all who have assisted me in obtaining the information and data related to this work. I would also like to express my gratefulness for my family, who were always by my side from start to the final days.

TABLE OF CONTENTS

DECLARATION i
ABSTRACT ii
ACKNOWLEDGEMENT iii
TABLE OF CONTENTS iv
LIST OF TABLES vii
LIST OF FIGURES ix
ACRONYMS x
CHAPTER 1 1
INTRODUCTION 1
1.1. Background 1
1.2. Statement of the Problem 2
1.3. Research Questions 3
1.4. Research Objectives 3
1.4.1. General Objective 3
1.4.2. Specific Objectives 4
1.5. Scope of the Study 4
1.6. Significance of the Study 4
CHAPTER 2 5
LITERATURE REVIEW 5
2.1. Background of the Construction Industry 5
2.2. Construction Project 6
2.3. Definitions and Concepts of Management 7
2.4. Leadership 8
2.4.1. Definition of Leadership in Construction 8
2.4.2. Current Practices of Leadership in the Construction Industry 9
2.4.3. Importance of Leadership in Construction 9
2.4.4. Leadership and Project Failure 11
2.5. Skills to Lead Construction Projects 12
2.6. Project Manager's Role 14

2.7. Construction Project Performance 15
2.8. Success Factors 16
2.8.1. Project Manager Related Success Factors 18
2.8.2. Project Manager's Skill and Project Performance 19
2.9. Effects of Poor Leadership Practices on Construction Project's Performance 20
2.10. Construction Leadership in Ethiopian Construction 21
2.11. Previous Studies 22
2.12. Research Gap Identification 25
CHAPTER 3 26
RESEARCH METHODOLOGY 26
3.1. Study Area 26
3.2. Study Period 27
3.3. Study Design 27
3.4. Study Variables 27
3.5. Population and Sampling Method 27
3.6. Sources of Data 28
3.7. Data Collection Procedure 29
3.8. Data Presentation and Analysis 29
3.9. Ethical Considerations 32
3.10. Data Quality Assurance 32
3.11. Plan for Dissemination of Findings 32
CHAPTER 4 33
RESULTS AND DISCUSSIONS 33
4.1. General Information From Questionnaire Response 33
4.1.1. Profile of Survey Respondents 33
4.2. Construction Leadership Skills or Practices to Lead Construction Projects Effectively 36
4.2.1. Planning Skill 36
4.2.2. Communication Skill 38
4.2.3. Staffing and Team Building Skill 40
4.2.4. Time Management Skill 42

4.2.5. Effective Technical Management Skill....43
4.2.6. Problem Solving and Informed Judgment Skill....45
4.2.7. Integrity Skill....47
4.2.8. Decision-Making Skill....48
4.2.9. Conflict Resolution Skill....50
4.2.10. Monitoring For Results Skill....52
4.2.11. Sense of Responsibility Skill....53
4.2.12. Ethics....55
4.2.13 Summary on Construction Leadership Skills or Practices....57
4.3. Success Factors For Better Performance of Construction Projects....58
4.3.1. Project Management Related Factors....59
4.3.2. Project Managers Related Factors....60
4.3.3. Factors Related With Supervisors....62
4.3.4. Factors Related With Project Teams....63
4.3.5. Summary on Key Success Factors....64
4.4. Effects of Poor Construction Leadership Practice....65
CHAPTER 5....69
CONCLUSION AND RECOMMENDATION....69
5.1. Conclusion....69
5.2. Recommendations....70
REFERENCES....73
APPENDIXES....77

LIST OF TABLES

Table 2.1 Factor Groups that Affect Construction Project's Success 15
Table 2.2 Summary on the Scope of Leadership Studies In Construction Projects and Their Reference 24
Table 3.1 Ordinal Scale Used For Data Measurement 29
Table 3.2 Cronbach's Alpha Range Limit 31
Table 4.1 General Information from Questionnaire Response 33
Table 4.2 RII Value and Rank of Planning Skill Category 37
Table 4.3 RII Value and Rank of Communication Skill Category 39
Table 4.4 RII Value and Rank of Staffing and Team Building Category 41
Table 4.5 RII Value and Rank of Time Management Category 42
Table 4.6 RII Value and Rank of Effective Technical Management Category 44
Table 4.7 RII Value and Rank of Problem Solving and Informed Judgment Category ... 46
Table 4.8 RII Value and Rank of Integrity Category 48
Table 4.9 RII Value and Rank of Decision Making Category 49
Table 4.10 RII Value and Rank of Conflict Resolution Category 51
Table 4.11 RII Value and Rank of Monitoring For Results Category 52
Table 4.12 RII Value and Rank of Sense of Responsibility Category 54
Table 4.13 RII Value and Rank of Ethics Category 56
Table 4.14 Summary on the Level of Practice and Effectiveness of Construction Leadership Skills With Their Average RII Values and Ranks 57
Table 4.15 Reliability Statistics of Construction Leadership Skills or Practices to Lead Construction Projects Effectively 58
Table 4.16 RII Value and Rank of Success Factors Related With Project Management . 59
Table 4.17 RII Value and Rank of Success Factors Related With Project Managers 61
Table 4.18 RII Value and Rank of Success Factors Related With Supervisors 62
Table 4.19 RII Value and Rank of Success Factors Related With Project Teams 63
Table 4.20 Summary on Key Success Factors on Construction Leadership That can Affect the Performance of Construction Projects with Their Average RII Values and Ranks 65

Table 4.21 Reliability Statistics of Key Success Factors on Construction Leadership That Can Affect the Performance of Construction Projects 65
Table 4.22 RII Value and Rank of Effects of Poor Construction Leadership Practice on the Performance of the Building Constructions Projects 66
Table 4.23 Reliability Statistics of Effects of Poor Construction Leadership Practice on the Performance of the Building Constructions Projects 68

LIST OF FIGURES

Figure 2.1 Five Functions of Management 7
Figure 2.2 Relationships between Leadership and Construction Productivity Opoku (2011) 10
Figure 2.3 Conceptual Frame Work Developed By (Albert et.al., 2004) For Factors Affecting Project Performance 17
Figure 3.1 Map of Hawassa City (Source: Wikipidea.Org) 26
Figure 4.1 Work Positions of the Respondents 34
Figure 4.2 Job Experiences of the Respondents 35
Figure 4.3 Educational Backgrounds of the Respondents 35
Figure 4.4 Number of Executed Projects 36
Figure 4.5 Ranks of Planning Skills Category 38
Figure 4.6 Ranks of Communication Skills Category 40
Figure 4.7 Ranks of Staffing and Team Building Category 41
Figure 4.8 Ranks of Time Management Category 43
Figure 4.9 Ranks of Effective Technical Management Category 45
Figure 4.10 Ranks of Problem Solving and Informed Judgment Category 47
Figure 4.11 Ranks of Integrity Category 48
Figure 4.12 Ranks of Decision Making Category 50
Figure 4.13 Ranks of Conflict Resolution Category 51
Figure 4.14 Ranks of Monitoring For Results Category 53
Figure 4.15 Ranks of Sense of Responsibility Category 55
Figure 4.16 Ranks of Ethics Category 56
Figure 4.17 Ranks of Success Factors Related With Project Management 60
Figure 4.18 Ranks of Success Factors Related With Project Managers 61
Figure 4.19 Ranks of Success Factors Related With Supervisors 62
Figure 4.20 Ranks of Success Factors Related With Project Teams 64
Figure 4.21 Ranks of Effects of Poor Construction Leadership Practice on the Performance of the Building Constructions Projects 68

ACRONYMS

CM	Construction Manager
CSA	Central Statistical Agency
EEA	Ethiopian Economic Association
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Information
GNI	Gross National Income
GNP	Gross National Product
MoWUD	Ministry of Works and Urban Development
NGO	Non-Governmental Organization
RII	Relative Importance Index
SNNPRS	South Nation Nationalities and People Regional State
SPSS	Statistical Package for the Social Sciences
WBS	Work Breakdown Structure

CHAPTER 1

INTRODUCTION

1.1. Background

The construction industry is an industry, which is involved in the planning, execution, and evaluation (monitoring) of all types of civil works. Physical infrastructures such as buildings, communication & energy-related construction works, water supply & sewerage civil works, etc., are some of the major projects (programs) in the construction industry.

The construction industry plays an important role in the social, political, and economic development of a country. Construction is not only one of the major sectors of an economy, but it is also the largest and accounts from 12% to 25% of the gross national product (GNP) of both developed & developing countries. It consumes a higher percentage of the annual budget of a country specifically, in our country Ethiopia; it covers 58% of the annual budget (Semere, 2006). Despite the construction industry's significant contribution to the economy of developing countries and the critical role it plays in developing countries, the performance of the industry generally remains low. Moreover, the development of the construction industry in developing countries typically lags far behind other industries in those countries and their counterparts in developed nations. Generally, the construction industry in developing countries failed to meet the expectations of governments, clients, and society as a whole (Yimam, 2011).

Today's project management profession turns its dimension from giving high attention to technical methods only on planning and performance of projects to subjective and soft factors such as leadership, motivation, group dynamics, Interpersonal communication, culture, and ethics. Leadership is even more vital in the construction industry, where success is measured by the projects being on time, budget, and within quality. On the contrary, the absence of leadership is equally intense in its effects. Without leadership practice, organizations move too slowly, stagnate and lose their way (Liphadzi, M., Aigbavboa, C., & Thwala, W., 2015).

Construction is an industry involving people with different skills and knowledge. So, this requires a good leader to organize the resources available to succeed. In every Project management, there is planning, organizing, staffing, directing, and controlling. From the five engineering management, functional categories leading or directing is essential to the construction industry performance. Because directing is actually related to the organizational methods to work efficiently to achieve organizational purposes. Planning, organizing, and staffing are mere preparations for doing the work (Yada, A. L & Yadeta, F. T, 2016).

Many kinds of research have been conducted worldwide in leadership and its influence on the performance of construction projects. (Nedal J. G., 2012) Indicated that leadership factors such as motivation, communication, ethics, and interpersonal relations affect construction projects' performance. Studies done in different countries on different cases address different leadership styles in relation to project success. A leader's professional education, work experience, and training are outlined as the most significant factors affecting leadership in the building construction industry (Yada, A. L & Yadeta, F. T, 2016). But much more types of research are needed because construction performance, especially in developing countries, is poor. According to (Ofori, G., & Toor, S. R, 2012), developing countries have a greater need for leadership in construction because their project performance is weak, such as cost and time overruns, poor work quality, technical defects, poor durability, and inadequate attention to safety, health, and environmental issues. There are no sufficient studies on such topics in developing countries, and the Ethiopian construction case wouldn't be different from it.

1.2. Statement of the Problem

Ethiopia is one of the developing countries which can't achieve its construction project goals due to a lack of adherence to different major success factors. It is also true in the study area of Addis Ababa. (Yada, A. L & Yadeta, F. T, 2016) Also, it is indicated that the Ethiopian construction industry encountered delay, cost overrun, poor quality of materials. The two researchers suggest how poor leadership practices affect the performance of building construction projects in the Oromia region. Even though the researchers have shown those problems that will affect the performance of the

construction industry in the Oromia region, that is also true for that of the south region. Even if it is known that group integration and motivation play a great role in being productive and effective in construction projects, such a trend is not yet developed.

Additionally, Hawassa is one of the towns with a proliferation of growth in Ethiopia. Still, most construction projects are not completed on budget and with the given schedule and intended quality. This will affect the performance of the construction industry as a whole. So, the construction industry needs appropriate construction leadership practices due to this and other things. Those practices should be applied in the right manner to tackle the construction problem. Hence, to address this issue, it is useful to use the construction leadership practices and check the effectiveness to upgrade the construction project's performance. Therefore this research will investigate the effectiveness of construction leadership and the effect on the performance of building construction projects at Hawassa city.

1.3. Research Questions

The research questions that this study sought to answer; are as follows:

- To what extent has the construction leadership been practiced and its effectiveness in building construction projects at Hawassa town?
- What are the key success factors of construction leadership that can improve the performance of construction projects?
- What are the effects of poor construction leadership on the performance of building constructions projects?

1.4. Research Objectives

1.4.1. General Objective

The main objective of this research is to investigate the construction leadership effectiveness on the performance of building construction projects at Hawassa city.

1.4.2. Specific Objectives

1. To determine the extent of construction leadership practices and the level of effectiveness in building construction projects at Hawassa town.
2. To assess the key success factors on construction leadership that can improve the performance of construction projects.
3. To evaluate the effects of poor construction leadership on the performance of building constructions projects.

1.5. Scope of the Study

There are so many construction projects which are currently under construction in Ethiopia. This study focused on building construction projects at Hawassa town, which are under active construction, and did not consider other categories of the construction industry like road projects. If it includes other sectors, it will be vast and difficult to attain the above objectives in the time given.

1.6. Significance of the Study

This study is significant to project managers, site engineers, supervisors, and all construction professionals to enhance their leadership skills and be more committed and competent while managing construction projects. It also helps to look back at the existing leadership and management trends practices in construction projects, upgrade the performance of projects in Hawassa town, and keep them on track. In addition, other researchers can use this study as a guideline or reference for further research on construction leadership and its effect on the performance of building construction projects or other related topics.

CHAPTER 2

LITERATURE REVIEW

2.1. Background of the Construction Industry

The construction industry is the largest and most complex fragmented industry that involves owners (government, industry, private parties, and investors), designers and construction monitors (engineers and architects), constructors, field managers, supervisors, and craftsmen. Furthermore, the product is usually "custom made," with almost every project a separate and unique entity, conceived, financed, designed, constructed, and operated separately. Each group that contributes directly or indirectly to construction is represented by individuals, organizations, or associations with diverse and often fragmented interests. All the other contributors to the overall construction effort, including government representatives, planners, engineers, architects, bankers, bonding companies, material suppliers, lawyers, accountants, and others, are equally diverse in their talents, interests, and ways of operating (Habenom Gebru zeray, 2017).

As cited by (Metri B.A, 2005), the construction industry of any country is the backbone of the infrastructure and economy though it is a major contributor to the economy of any country. Among the major economic sectors, the importance of the construction industry is unique regardless of whether the country is underdeveloped, developing, or developed. The construction industry appears more than once in the national accounts: GDP, GNI, and GFCF. The outputs are measured by gross output, capital formation, and added value. More than half of GFCF consists of construction outputs. The homes, offices, roads, factories, and shopping malls are all part of the outputs of the construction industry, among other capital or investment goods (Olanrewaju, A., Tan, Y. S., & Kwan, L. F., 2017).

Construction, as defined by the United Nations Statistics Division, is “an economic activity directed to the creation, renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature, and other such engineering constructions as roads, bridges, dams and so forth.” It is a process that consists of building or assembling infrastructure in architecture and civil engineering. It comprises

the building of new structures, including site preparation, as well as additions and modifications to existing ones ((CSA)., 2011)

2.2. Construction Project

Construction projects represent a unique set of activities that must take place to produce a unique product. The success of a project is judged by meeting the criteria of cost, time, safety, resource allocation, and quality which the owner determines. Project Management aims to achieve goals and objectives through the planned expenditure of resources that meet the project's quality, cost, time, scope, and safety requirements. The CM must control, deflect, or mitigate the effects of any occurrence or situation that could affect project success (Muir, 2005). In any construction project, time (schedule), cost (budget), and quality (performance) are considered to be the basic project parameters. Often, these parameters are considered the three sides of a triangle. A project should satisfy all three parameters to be successful (Haughey D., 2011). In the project control process, controlling the above variables is paramount. Time should be controlled by controlling and adjusting the schedule so that the project progress must be much with the planned progress. The project may be completed within the planned contract time; cost should be controlled so that the project may be completed within the earmarked budget (the project must be completed without exceeding the authorized expenditure), the scope (performance and quality) should be controlled in order to maintain the anticipated employer's requirements and quality so that the result of the project must fit its intended purpose (Westland J., 2018).

In a developing country like Ethiopia, infrastructure development is one of the basic needs required by the community. When projects are delivered on time and cost (within the quality required), they can serve the community for their intended purpose in addition to proper utilization of resources by the nation. So, in order to control those variables and afford the construction projects at the right time, we need to have a proper management system and leadership throughout the whole construction process to achieve what we need at the end of the day.

2.3. Definitions and Concepts of Management

It is believed that the concept of management started when people started to form groups in order to organize their effort together. Management has various definitions. Sometimes experts define it as a life-giving element of organizations. All the definitions agreed that management means a process of integrating both human and physical resources in the way of achieving the objective. According to Henri Fayol, management is the "conduct of business affairs, moving towards its objective through a continuous process of improvement and optimization of resources." According to him, management functions are divided into five sections (Www.Managementstudyguide.Com).

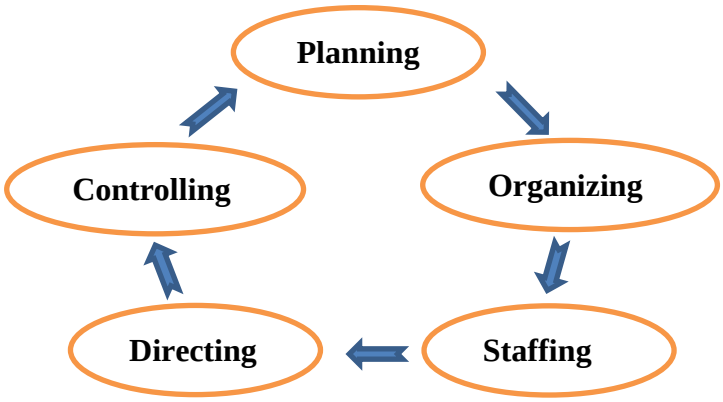

Figure 2.1 Five Functions of Management

1. **Planning:** it is all about setting the organizational goal. It is the decision of the future on how, when, and what to do. Planning must take into consideration of the available resources and their proper utilization.
2. **Organizing:** it is the process of bringing together physical, financial, and human resources and developing productive relationships amongst them to achieve organizational goals.
3. **Staffing** is recruiting human resources to the right position for the right job.
4. **Directing or Leading:** It actuates the organizational methods to work efficiently to achieve organizational purposes. It is considered a life spark of the enterprise that sets in motion people's action because planning and organizing are the mere preparations for doing the work.

5. **Controlling:** It is a process of measuring the performance against the standards and making the necessary adjustments. The purpose of controlling is to ensure that everything conforms to the standards. The management process is the same in all forms of organization, but it may become complex with the type of organization and type of project.

2.4. Leadership

From those five management functions, this research focused on leading or directing. Directing is giving order or duty to people and showing direction on how and when to do it. There is no single definition for leadership. Leadership motivates and guides people to realize their potential and achieve tougher and more challenging organizational goals (Anantatmula, 2010). Leadership can be good or bad. The result of good leadership is long-term project success. Likewise, bad leaders can lead to failure.

2.4.1. Definition of Leadership in Construction

The concept of leadership is widely known in any endeavor to achieve success. Literature defined leadership in construction projects in the following ways:

According to (Dahal, R. K., & Manoj, K., 2016), leadership is relevant to managing the construction process, projects, and products. It is about influencing, communicating, giving motivation, guidance, and supervision for attaining the project's goal.

According to (Mohamed, 2014) leadership in the construction sector is the one-factor affecting construction productivity. He also showed how effective leadership and supervision in construction projects increased productivity by decreasing production costs, reducing the time required for the operation, improving profit, improving product quality, and increasing resource utilization and conservation.

Leadership in construction projects is very necessary. That is why today's project management systems emphasize it. Construction firms also preferred professionals with better management and leadership skills.

2.4.2. Current Practices of Leadership in the Construction Industry

The construction industry has a greater need for leadership than, arguably, any other field of endeavor (Ofori, G., & Toor, S. R, 2012) they state two reasons for this first construction projects are large and technically complex, and they involve a combination of specialized skills. Thus, the teams are large and multi-disciplinary, and the members are from several different organizations. Second, the projects take a long time to complete and involve many discrete activities, which increases certain time-related risks and exacerbates problems with communication, coordination, and the ability to manage a wide range of risks. The current practice of leadership assessed in different countries, for instance, a study in Malaysia construction industries, indicates that the dominant problems such as time overrun, cost overrun, and quality problems in Malaysia can be enhanced by proper leadership in the sector.

The developed countries are good at exercising leadership in their construction industries. They have many forms and networks to connect leaders and exchange knowledge. Most developing countries are blamed for not using their resources effectively. This problem is also reflected in the construction industry. One of the reasons is less attention to leadership development. Developing countries have an even greater need for leadership in construction. First, developing countries report more project performance deficiencies, such as cost and time overruns, poor work quality, technical defects, poor durability, as well as inadequate attention to safety, health, and environmental issues (Ofori, G., & Toor, S. R, 2012).

2.4.3. Importance of Leadership in Construction

The importance of leadership in construction projects is enormous in increasing productivity, improving safety performance on-site, and upgrading sustainable practices. These can be mentioned from the many benefits. According to (Bhangale, P. P., & Devalkar, R., 2013) in their study on the importance of leadership in construction Projects, they list 56 leadership skills under seven sub-groups which are called personal skill, team building, vision & strategy, decision making, planning skill, and relationship management skill. Finally, they conclude that leadership is one of the most important and essential factors in actual construction project management.

According to (Dahal, R. K., & Manoj, K., 2016), the reason behind Nepal's construction Industry challenges such as poor design and quality of projects .91% of the total respondents agreed that effective leadership is one of the primary answers to the problems in Nepalese construction Industry.

According to (Opoku, 2011), the other main advantage of leadership in construction projects is the increment of productivity. Any contractor wants to be profitable; thus, they are concerned with improving productivity. His study on the importance of leadership in construction productivity improvement indicates how effective leadership can improve construction productivity, including effectiveness, satisfaction, and project success.

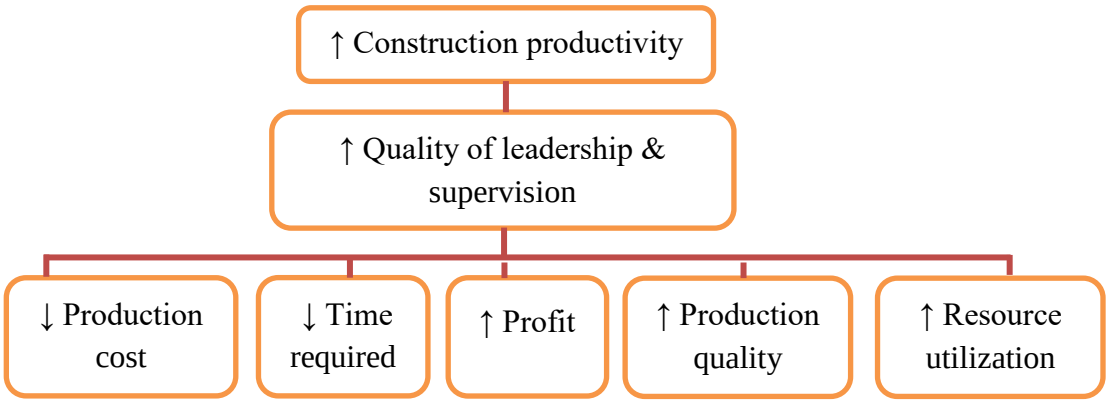

Figure 2.2 Relationships between Leadership and Construction Productivity Opoku (2011)

Figure 2.2 shows that an increase in quality of leadership and supervision results in improved product quality and service, decreased production cost, the time required for the product, and improved market share and profit. Better utilization of resources indicates an increase in the quality of leadership and supervision. Recently countries concerned with the agenda of sustainable development in their construction industries. Thus leadership is vital in the construction industry towards achieving sustainability. According to (Opoku, 2011), construction leadership helps construction organizations to have a collective vision, strategy, and direction towards the common goal of a sustainable future.

The other problem related with construction is the health and safety of workers. Many workers have died due to insufficient attention and care to health and safety in construction sites. Good mitigation has strong management or a leader who cares for his team. (Natalie , S. C., & Mbohwa, C., 2015), describe how leadership behavior, style, and commitment have a direct influence on safety performance within the workplace in preventing injuries and fatalities in the construction industry. The study indicates that culture is a critical issue in managing health and safety within construction companies and shows that in transforming the organizations' safety culture, there is a significant relationship between leadership behavior and the safety culture in the workplace. The influence that leadership has in setting the tone and culture within the organization directly impacts the behavior of employees in their contribution towards safe working practice.

2.4.4. Leadership and Project Failure

Typical causes of project failure occur when the following criteria are not met;

- On time delivery
- On or under budget
- Acceptance by the client based on the stated scope of work

Because of many reasons, construction projects cannot be completed on time, within the budget, and with desired quality. Usually, project failures or underperformance condition in construction happens due to technical problems, but the project manager's weakness of leadership role may also lead projects to failure. Likewise, the Ethiopian construction case is not different from other developing countries.

As Dr. Wubishet (2016) expressed in reporter magazine, the main problems of the country's construction projects are the intervention of owners or stakeholders with the traditional approach to project design, planning without the consent of required professionals, and not using applicable guidelines of project management. Due to this, 72 percent of projects financed by the development bank of Ethiopia in the year 2013 were under the failure category.

According to (Getachew, 2015) the condition of poor manpower quality in projects is also a significant cause of project failures. Moreover, many projects in Ethiopia did not apply planning knowledge areas effectively. (Lemma, 2014) Indicate percentages of application of planning knowledge in projects. Risk planning is implemented in only 20.35% of projects, quality planning 33.6% of projects, communication planning 44.2% of projects, integration planning 46.5% of projects, and scope planning 48.85% of projects. It was also identified that construction professionals and stakeholders of projects usually do not discuss and communicate adequately and regularly.

2.5. Skills to Lead Construction Projects

Leaders in construction have a role in setting direction, motivating people, and aligning human and material resources. To accomplish such roles, they need to know certain skills. The following skills are adopted from (Benator, B., & Thumann, A., 2003).

1. **Planning ability**

   The outstanding leader should look ahead to potential obstacles. The skills associated with this competency are:

   - Planning beyond the demands of an immediate situation
   - Identifies obstacles before the crisis happens
   - Matches people to jobs to get the best performance
   - Develops an action plan to reach an objective
   - Setting priority: construction leaders should prioritize which task is done activities first. It helps to utilize resources effectively, and project time can be saved.

2. **Communication**

   Communication is the backbone of leadership. It is vital in all stages of construction, such as Planning, Design, Work execution, Project commissioning, and Maintenance stages. The information is transferred in the form of drawings, specifications. Ineffective communications lead to a de-motivated workforce, design errors, slowdown in the entire job, and failure in production. Therefore, Construction professionals should communicate throughout all construction stages. Project

management institute (2003) found that construction businesses that emphasize communication perform five times better than those that do not prioritize effective communication.

3. **Schedule and cash flow management**

   Project managers have to call meetings to review the schedule. It can track the progress of the project against the plan and help spot early on whether the project is in danger from a scheduling point of view. To effectively manage the financial part of the construction project, project managers should become intimately familiar with the project control system used. Because the reports and information provided by the systems typically yield a wealth of information about the project's financial status.

4. **Conflict resolution**

   Conflict may happen during construction. The main thing is solving the issue in the right manner. Project managers can mitigate the conflict excellently by analyzing the situation and making decisions. Those good leaders are also good at negotiating; these qualities will help projects not waste their time and money.

5. **Motivation and training**

   Motivation is a set of processes that moves a person towards its goal. One of the actions of leaders on projects is motivating their crew and making them feel like they are working for their own company. This sense of belongingness will help construction companies meet their mission and effectively perform tasks. People naturally want encouragement. Thus, a person can increase their effort and go beyond the limit, which helps them be successful.

6. **Ethics**

   Ethics normally include a system of norms in which a professional's morality and behavior be dealt with in their day-to-day practice. By having ethics, people can position themselves within the web of interrelationships among other parts of created reality (Nedal J. G., 2012).it is believed that professionals can keep the project's quality if they adhere to what their profession asks and have good ethics.

2.6. Project Manager's Role

Apart from other sectors, the construction industry involves people with different skills and knowledge. The project needs people who can work together with good communication and integration. That is how they can be successful, and that is why leadership characteristics are so important to construction project managers. Numerous stakeholders, such as the client, consultants, contractors, government officials, community, laborers, and project team members, may influence the project or its outcome (Yosia, 2015).

According to (Tagesse, 2017) and (Mohd, 2006), a construction project manager, as a person who gains experience in managing, monitoring, controlling projects. The first persons responsible for the productivity of construction projects are the project managers. Successful project managers should complete their projects with high quality, minimum cost, and time. Most individual companies and organizations, which require construction project services, did not have enough resources and expertise to carry out the role of the project manager to complete the projects with intended performance (Mohd, 2006).

According to (Nedal J. G., 2012), the idea that project manager is one of the major stakeholders in a construction project, and his competence is a critical factor influencing project planning, scheduling, and communications. Keeping the cohesion of projects teams, motivating, making excellent decisions, resolving disputes, and having good communication are expected. Hence, project managers should always be leaders who can motivate and inspire workers and can contribute to the success of projects by the following roles (Xiong, 2008).

- Understanding the needs and characteristics of the post
- Communicating
- Knowing and using the resources of the group
- Planning and Controlling group performance
- Setting the example
- Sharing leadership, and effective teaching and Counseling

2.7. Construction Project Performance

Performance refers to fineness and includes profitability and productivity, among other non-cost factors, such as quality, speed, and delivery. Previous researches have been studied regarding the performance of construction projects related to different aspects. Performance is measured by time, cost, and quality in any construction project. Therefore Success in construction means meeting the right standards and achieving the project goal. Many factors will contribute to the performance of construction projects. Project leadership practice has an impact on project performance.

Table 2.1 Factor Groups that Affect Construction Project's Success

Performance factor groups	Factors
Factors relating to the project manager	Ability to delegate authority, ability to trade-off, ability to coordinate, perception of his role & responsibilities, competence, commitment
Factors relating to the project team members	Technical background, communication skills, troubleshooting, commitment
Factors relating to the project	Size and value, uniqueness of project activities, the density of a project, life, urgency.
Factors relating to the organization (firm)	Top management support, project organizational structure, functional managers‟ support
Factors relating to the external environment	The political environment, economic environment, social environment, technological environment, nature, client, competitors, subcontractors.

Construction project performance and proper leadership practices are highly related. Projects with a good leader are successful. Some examples show the effect of leadership on construction project performance.

According to (Shibani, 2016) the rapid development of the sector has raised vast interest in the leadership aspect and looking for experienced professionals with effective leadership and management skills in addition to technical experience.

According to (Dahal, R. K., & Manoj, K., 2016), the construction performance in Nepal is poor in many levels and dimensions. They identified ineffective leadership as one of the primary answers to those problems.

According to (Owusu, 1999) the managerial capacities of contractors such as site management practices and lack of technical expertise are affecting the performance of construction.

According to (Liphadzi, M., Aigbavboa, C., & Thwala, W., 2015), in the South African construction industry, planning and money concerns are not the problem; instead, leadership is the actual problem. He indicated that the construction project outcome is unsatisfactory because of a lack of leadership.

2.8. Success Factors

Projects that achieve their objective in quality, cost and time can be considered successful. Researches have been done worldwide on different factors that affect the success of construction projects. According to (Shibani, 2016) project should fulfill the following criteria to be said successful.

- Completed within the specified time frame
- Within the planned cost
- Executed in the best possible way with suitable determination
- User and customer are satisfied

Construction projects can be affected by different categories of factors. (Albert et.al., 2004), in their study on factors affecting the success of construction projects, identify five major groups of success factors and develop a conceptual framework. These are:

1. project-related factors
2. project procedures
3. Project management actions,
4. Human related factors
5. The external environment is identified as crucial to project success.

From the many factors, human-related or project participants related factors are mentioned as one success factor to make construction projects successful. The diagram below shows a group of success factors with their detail. There is no universal agreement on each success factors categories and their level of significance. Still, most studies indicated that each success factor affects the performance of construction projects, and the only thing is the level of severity. Human-related factors are the broadest ones since they combine different aspects of project key players and stakeholder management.

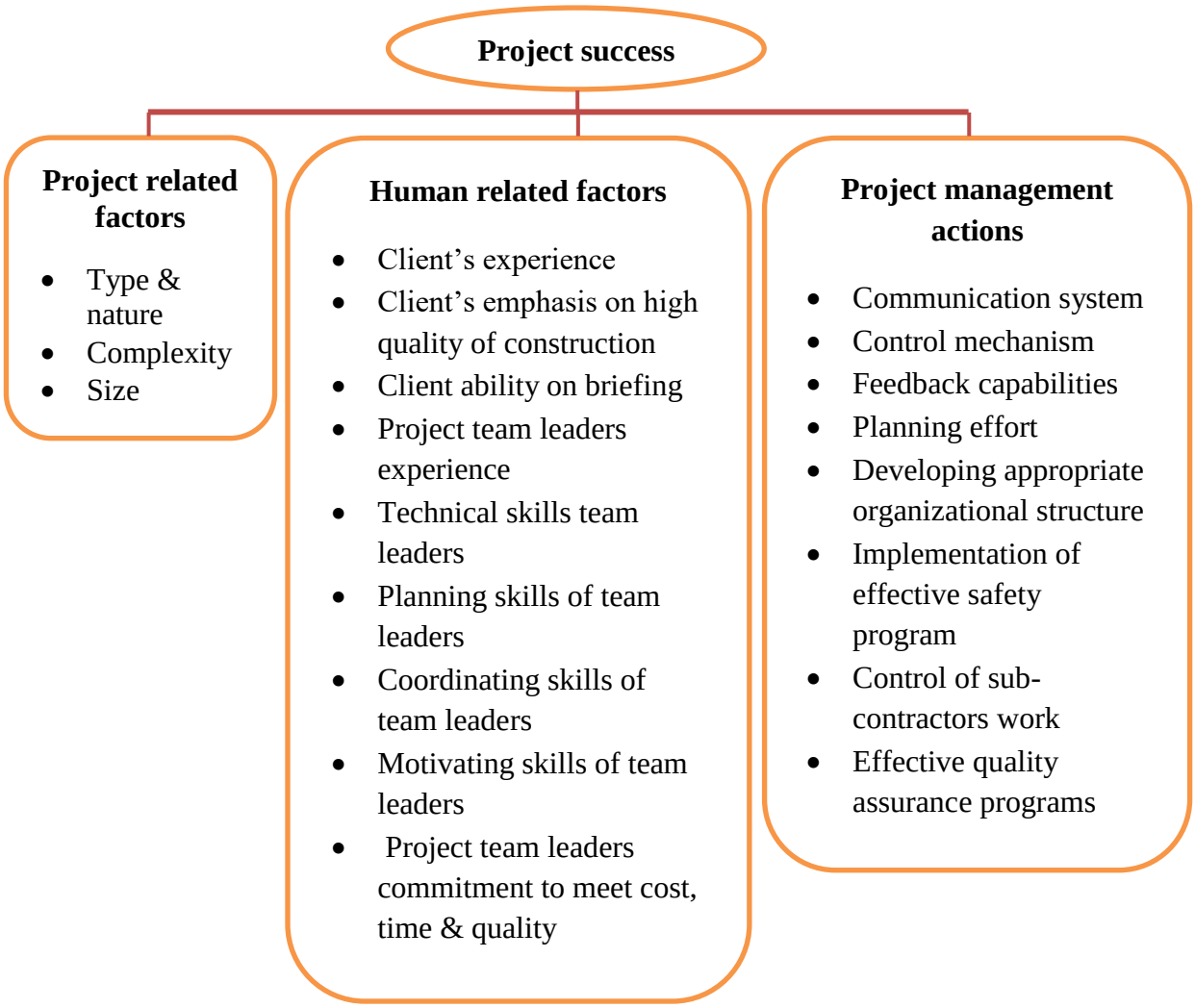

Figure 2.3 Conceptual Frame Work Developed By (Albert et.al., 2004) For Factors Affecting Project Performance

2.8.1. Project Manager Related Success Factors

Project managers can be considered heads of projects because they are responsible for the overall performance. They have to ensure that all project activities are completed in accordance with time and budget requirements and at the highest level of quality. As the literature indicates, project managers' skills and competency can greatly affect the performance of construction projects. From many skills, leadership is critical and has to conceive by professionals. A successful project requires effective leadership from the project manager. Their competence is a major factor affecting project planning, scheduling, and communication. Project manager-related success factors are the following; (adopted from (Belay et al., 2017).

- Project managers commitment to meet quality, cost &time
- Project managers early & continued involvement
- Coordinating ability and rapport of project manager with contractors/ subcontractors
- Project Managers authority to take the financial decision, selecting key team members
- Organizing & coordinating skills of project manager
- Project Managers authority to take day-to-day decisions
- Project Managers experience and competency

Studies on different countries identify which factors contribute to the underperformance of their construction projects. According to (Iyer et al., 2006) in their study called the reasons behind the underperformance of the quality of Indian construction project, they identified the following critical factors responsible for imparting quality performance of the projects.

- Project managers competence
- Top management support; monitoring and feedback by project participants
- Interaction among project participants; and owners‟ competence.

According to (Iyer et al., 2006), project manager’s competence is the most significant factor at almost all levels of the quality performance rating. The factors that adversely

affected the quality performances were conflict among project participants, hostile socio-economic environment, harsh climatic conditions, project manager's ignorance & lack of knowledge, faulty project conceptualization, and aggressive competition during tendering. The success of construction projects largely depends on the construction leader's performance. Thus, construction leaders should be equipped with a wide variety of leadership qualities and experiences to steer construction projects successfully (Ismail , A., & Nashwan , A.-E., 2018).

According to (Kifle, 2013) poor site management is the output of a lack of skilled and experienced project managers, both technically and managerial skills. The project manager, a key person, is important for good site management for better time performance and project success. A good and experienced project manager provides the necessary tools to utilize its resources and finance more effectively and efficiently.

A study on building construction projects management systems in Addis Ababa, Ethiopia, indicates that decision-making effectiveness, a timely decision by owner/owner's representative, and leadership skills of the project manager are the most significant success factors (Belay et al., 2017).

2.8.2. Project Manager's Skill and Project Performance

Studies on construction leadership usually relate the subject to project managers. Project managers play a great role in achieving good performance. According to (Kifle, 2013), planning, scheduling, and directing tasks rely on project managers in construction projects. Therefore to have a successful project, a capable project manager should follow a project management process that includes project planning, team build or staffing, directing functions, and control measures.

According to (Faridi , S. A., & El-Sayegh,, 2006), shortage of skills of manpower, poor supervision, and poor site management; unsuitable leadership; shortage and breakdown of equipment, among others, contribute to construction delays in the United Arab Emirates. The skill of professionals available for the implementation of that specific project greatly impacts the completion of the specific project. Leadership brought measurable factors such as effectiveness, satisfaction, and extra effort on work.

Generally, different construction leadership skills help to improve project performance, and it is highly related with projects time, cost, and quality performance.

2.9. Effects of Poor Leadership Practices on Construction Project's Performance

One of the main components in ensuring success in the construction project is good leadership quality or practice. A good leader will be able to manage the project effectively and also be able to strategize construction activities based on the risk management approach. Proper leadership skills among the construction parties will enable them to navigate the construction process sustainably (Nasaruddin, N. A., & Rahman, I. A., 2016). For a long time, the construction industry has faced challenges such as; time overrun, cost overrun, quality in construction, and safety during the construction process. Several factors are involved, which amongst is leadership quality. Human factors affect the performance of a construction project.

A project manager, who lacks strong leadership skills couldn't monitor, control, assure safety and manage project performance with high quality. Poor leadership practices in construction projects affect the overall performance. In some countries, their construction projects are affected due to inadequate attention to them. The other effect of lack of leadership in construction projects is a failure to implement health and safety. The practice of safety in construction organizations is likely to be impacted by the role of leaders. The influence that leadership has in setting the tone and culture within the organization directly impacts the behavior of employees in their contribution towards safe working practices (Natalie , S. C., & Mbohwa, C., 2015), the study shows that in transforming the organizations' safety culture, there is a significant relationship between leadership behavior and the safety culture in the workplace.

Construction leadership also affects laborers' and team members' productivity. As it is known, the output and efficiency of workers is a matter of success. Therefore leadership can play an important role in improving the skill, commitment, motivation, and coordination of professionals. Innovation in the construction sector is crucial in enhancing the techniques used, improving productivity, and increasing work quality.

According to (Zhang, Y., Zheng, J., & Darko, A. , 2018) transformational leadership promotes the sustainable development of the construction industry. Demand-side factors, such as demand from owners, can greatly influence the construction innovation process and induce project participants to invest resources, technology, funds, etc., in innovative activity. Supply-side factors, such as technology, have also attracted attention regarding the construction innovation process (Zhang, Y., Zheng, J., & Darko, A. , 2018). The poor practice of leadership in construction projects can aggravate mismanagement and planning problems. Therefore, appropriate personnel with the right competency should be placed in leading construction projects to resolve such situations.

2.10. Construction Leadership in Ethiopian Construction

The Ethiopian construction sector is in remarkable growth. The quality of leadership in the Ethiopian construction industry is a plan which needs more research. According to previous research which was conducted in the Oromia industry and urban development bureau on the investigation of factors that affect the cost, time, and quality, and leadership style, the most significant factors affecting the leadership performance were leader's professional education, relevant work experience and experience and training (Yada, A. L & Yadeta, F. T, 2016).

In Ethiopia, the main problem during the construction period is a lack of proper management, technology, and skilled manpower (Alem T., 2015); he recommends resolving the situation by increasing technology in building construction to offer sound management and leadership. Management in the construction process includes overall project planning and scheduling, on-site material handling, effective use of resources, and methods of construction activities.

The causal problems for low productive performance in Ethiopian construction projects are unfulfilled conditions from project site external bodies, lack of project management systems, poor technical management in areas of developing productivity standards and construction methods, average leadership efficiency, and low project culture towards workers satisfaction are responsible for low productivity performance. According to

(Belay et al., 2017) investigated the top ten major success factors in the study of major success factors on building construction project management systems in Addis Ababa.

- Leadership skills of project manager
- Project clear objective, adequacy of funding, decision making effectiveness
- Project monitoring;
- Project manager's commitment to meet quality, cost &time
- Project manager's early & continued involvement in the project
- Contractor's cash flow
- Site management
- Coordinating ability and rapport of project manager with contractors/ subcontractors
- Project manager's authority to make the financial decision, selecting key team members
- Organizing skills of project manager

A researcher on the relationships between leadership which based on a reward and punishment interaction set-up(transactional leadership) and project success in 224 nongovernmental organizations (NGO) sector development projects in Ethiopia indicated that Project goal clarity could play a significant role in moderating the effect of leadership on project success (Aga, 2016). The research finds that contingent reward in transactional leadership is positively related to project success.

2.11. Previous Studies

There are previous studies regarding leadership importance in construction, project manager's skills, and its impact in construction project performance. The importance of leadership in the construction sector and its significance on productivity were discussed by (Mohamed, 2014). Leaders' role in promoting sustainable practices and health and safety improvements has been discussed in (Opoku, 2011; Olanrewaju, 2013; Bhangale, 2013; Mbohwa, 2015). They indicated that construction leadership is very important in resource utilization, promoting green construction, improving the safe working environment, and completing projects on time. Skills required to lead engineering and

construction projects are discussed briefly by (Benator, B., & Thumann, A., 2003). The research identified basic skills such as sense of responsibility, positive expectations, informed judgment, conceptualization, use of multiple influence strategies, leader influence, conscientious use of discipline, effective communication, planning, initiative, monitoring for results.

Studies were done on success factors and their significance in construction projects performance. The extent of contribution of each factor differs from study to study. (Iyer et al., 2006) studied the reasons behind the underperformance of quality in construction projects of India and identified the following critical factors responsible for imparting quality performance of the projects.

- Project manager's competence
- Top management's support; monitoring, and feedback by project participants
- Interaction among project participants; and owners" competence

(Sunindijc, 2015) Identified which skills affect construction projects' cost, quality, and time performance. The result indicated that human skills such as communication, emotional intelligence, planning skill, apparent sincerity, and budgeting skill of project managers affect the overall performance of projects. Perception of leadership among professionals and its management in the context of different countries covered in (Ismail and Nashwan 2018; Shibani 2016; Nedal 2012; Thwala et al. 2015; Natalie and Charles 2015; Dahal and Manoj 2015; Price 2009).

Several studies were also done on which leadership style of project managers is appropriate and enables construction projects' performance successful. Other studies were done on the effect of poor leadership quality in construction projects. Which skills affect projects' time, cost, and quality performances described in (Sunindijc, 2015). The study identified four skills of effective project managers, namely, conceptual, human, political, and technical skills. Studies relate the effect of construction leadership with performance, safety implementations, and sustainability issues. After reviewing those kinds of literature, it was observed that the researches were focused on the leadership skills that are more significant to construction projects. It was perceived that limited consideration

was given to the practical aspects of construction leadership. The following points can be mentioned as a limitation.

- What is the current practice of construction leadership?
- Which skills and techniques of construction leadership affect the success of projects?
- How do leaders influence and contribute to enhancing safety in construction?
- What relation is there between construction project leaders and green construction?

Dedicated journals have still emerged, such as leadership and management in engineering (published by the American society of civil engineers) and engineering and construction leadership. Especially finding researches in developing countries is limited. Therefore, the main objective of the present study was to investigate the effectiveness of construction leadership and the effect on the performance of building construction projects.

Table 2.2 Summary on the Scope of Leadership Studies In Construction Projects and Their Reference

Author	**Scope**
Rahman et al.,(2016)	Investigation of leadership quality in resolving construction issues for Malaysia construction industry.
Sunindijo (2015)	Leadership skills those influence time, cost, and quality performance in construction projects.
Shibani (2016)	Project managers‟ leadership skills on the construction projects performance in Dubai.
Nasaruddin et al.,(2017)	Average level of significance of leadership factors amongst CSFs.
Anantatmula (2010)	People-related factors of project performance are identified interactions among these factors and the role of leadership in project performance.
Opoku (2011)	Leadership in the effective implementation of sustainable practices.

2.12. Research Gap Identification

Normally, the subject is not that familiar in the construction sector, and few studies have been conducted. Some researchers argue that most studies on leadership in the construction industry concentrate on investigating the personal characteristics of project managers. After reviewing the kinds of literature of the researches, some gap is identified. Most researchers assessed leadership skills in construction projects and their relative performance. However, the current practice of leadership in construction projects and the effects are not covered well. Such research has not been done in the Ethiopian construction industry. Thus it makes it difficult to know how the practice of construction leadership reached. This study adds knowledge regarding what deficiency is there regarding the issue. And identify the level of perception of the subject.

CHAPTER 3

RESEARCH METHODOLOGY

3.1. Study Area

This study was conducted at Hawassa town. Hawassa is a town in Ethiopia found on the shores of Lake Hawassa in the Great Rift Valley. It is located around 270 kilometers south of Addis Ababa via Debre Zeit, 130 km east of Sodo, and 75 km north of Dilla. The town serves as the capital of SNNPRS (south nation nationalities and people's regional state) and the newly established Sidama regional state. Hawassa lay at an altitude of 5604 ft (1,708 m) above sea level and is located within 7o 03' 43.38" N latitude and 38o 28' 34.86" E longitude coordinates. Based on the 2007 census conducted by Ethiopia's central statistical agency (CSA), this zone has a total population of 258,808, of whom 133,123 are men and 125 685 women. While 157,879, or 61%, live in Hawassa, the rest of the population lives in surrounding rural kebeles.

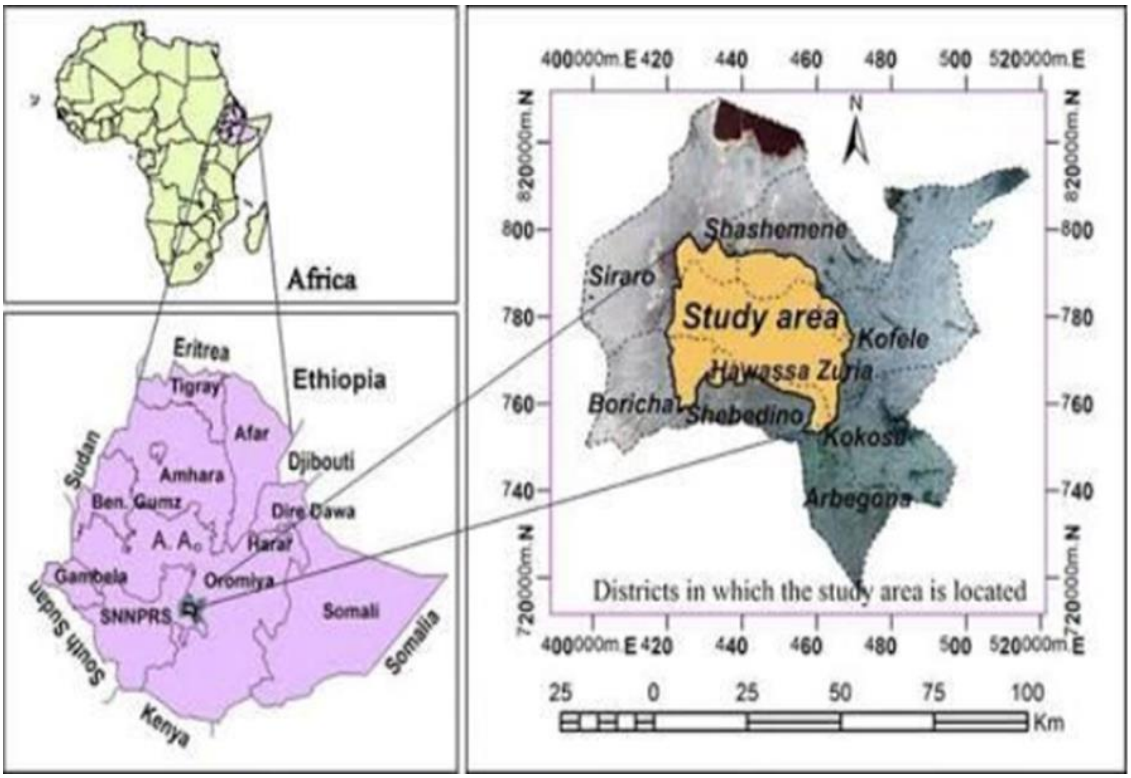

Figure 3.1 Map of Hawassa City (Source: Wikipidea.Org)

3.2. Study Period

This research was carried out within six months, started in March 2021, and ended in August 2021.

3.3. Study Design

The study design or frame used was a mixed-method approach or utilized qualitative and quantitative research approaches. This is because mixed methods are capable of enhancing the confidence and credibility of results; its validity; and in intensifying creativity and innovation of processes (Easterby-Smith, M., Thorpe, R., & Jackson, P., 2012) and added that mixed methods could assist in synthesizing and integrating theories by combining confirmatory and exploratory research at the same time.

3.4. Study Variables

Dependent variables:

- Construction leadership practice

Independent variables:

- project leaders
- project team members
- project nature
- organization or firm
- external environment

3.5. Population and Sampling Method

3.5.1. Population

The sample frame or target population for this research was building construction projects at Hawassa town. According to the information obtained from South Design and Construction Supervision Enterprise, there were 20 projects under construction.

3.5.2. Sampling

The sample size of this research paper was selected from building construction projects under construction in Hawassa city. The sampling technique adopted for this study was

the purposive sampling technique. This technique is typically used when focusing on a limited number of informants whom the researcher selects strategically. Their in-depth information will give optimal insight into an issue about which little is known. The sample size was calculated using Slovin's formula. Slovin's formula allows a researcher to sample the population with the desired degree of accuracy (Stephanie, 2003). Concerning the level of accuracy, a confidence level of 94%, as suggested by Kothari (2005), means that there are 94 chances in 100 (or .94 in 1) that the sample results represent the true condition of the population within a specified precision range against four chances in 100 (or .05 in 1).

$$n = \frac{n'}{1+\frac{n'}{N}} \qquad (3.1) \qquad \text{(Stephanie, 2003)}$$

Where; n = total number of population;

N = sample size from a finite population

n' = sample size from an infinite population,

$$n' = S^2/V^2 \qquad (3.2)$$

S = variance of the elements in the population, and V = standard error of the sampling population. (Usually, S = 0.5, and V = 0.06) so, $n' = 0.5^2/ 0.06^2 = 69.44$

From equation 3.1, for N = 20; hence, n' = 69.44/ [1+ (69.44/20)] = 15.52 say 16 projects to achieve the 95% confidence level; it was computed to send the questionnaires to 16 projects. Also, respondent's size determined by using Slovin's sampling formula:

$$n = \frac{N}{1+N*e2} \qquad (3.3)$$

Where: N = total number of questionnaires (64); n = number of sample size; e = error margin/ margin of error, a 94% confidence level was taken and e = 6%. So, for 64 professionals: n = 64/1+64 (0.06*0.06) = 52.01~ 53 questionnaires was distributed for target respondents.

3.6. Sources of Data

The study is based on a mixed approach, so, for this study, data were collected from primary and secondary sources to answer the basic questions of this research. Primary

data was made up of first-hand data collected through structured questionnaires. The secondary data sources were obtained using relevant books, journals, magazines, and research papers.

3.7. Data Collection Procedure

In this research, the data collection process used during the research time was done by distributing questionnaire papers to construction projects under construction. Structured questionnaires with closed-ended questions were distributed to stakeholders (Contractor, Consultant, and Owners); the questionnaires were collected from the respondents. This secondary research data was also collected from reference books, websites, previous research, and other topic-related materials.

3.8. Data Presentation and Analysis

After successfully collecting data through structured questionnaires, the data were analyzed by the quantitative and qualitative data analysis methods. The quantitative measures were used to generate descriptive statistics to analyze frequencies, means, and percentages. The qualitative measures were analyzed by summarizing key findings, explanations, interpretations, and conclusions. The results were reported using descriptive statistics, frequency tables, pie charts, and graphs. The data analysis was done using necessary tools such as Simple statistical analysis involving tables and percentages and graphs using mean scores and the Relative Importance Index (RII) using ordinal scales. As shown in Table 3.1, an ordinal scale is a ranking or a rating of data that normally use integers in ascending or descending order.

Table 3.1 Ordinal Scale Used For Data Measurement

Ordinal scale	Description
1	Extremely significant
2	Very significant
3	Moderately significant
4	Slightly significant
5	Not significant

The RII was used to rank (R) the different skills and practices needed to lead construction projects effectively. These rankings make it possible to cross-compare the relative importance of those skills and practices perceived by respondents. Each skill and practice perceived by all respondents was used to assess the general and overall rankings in order to give an overall picture of the construction leadership practices to lead construction projects effectively. The Relative Importance Index (RII) is calculated as follows (Aibinu and Jagboro., 2002).

$$RII = \frac{5n1 + 4n2 + 3n3 + 2n4 + 1n5}{5(n1 + n2 + n3 + n4 + n5)} \qquad (3.4)$$

Where; n1= Number of frequencies 'extremely significant' response,

n2= Number of frequencies 'very significant' response

n3 = Number of frequencies 'moderately significant' response

n4 = Number of frequencies 'slightly significant' response.

n5 = Number of frequencies 'not significant' response.

The questionnaire items required participants to respond on a series of Likert items of 1 to 5. The mean score of each of the variables was determined to establish the significant factors in each construct. The mean was used to analyze respondents' opinions that could range between, e.g., very high 5 points, very low 1 point. The mean score had been employed by many researchers (Kumar, 2010), and this was determined for each construct using the formula given below.

$$Mean\ score = \frac{5n1 + 4n2 + 3n3 + 2n4 + 1n5}{n1 + n2 + n3 + n4 + n5} \qquad (3.5)$$

Where; n1 = number of respondents who answered "'extremely significant"

n2 = number of respondents who answered "very significant"

n3 = number of respondents who answered "moderately significant"

n4= number of respondents who answered "slightly significant"

n5= number of respondents who answered "not significant"

The validity and reliability of questionnaires were checked by Cronbach's Alpha using a Statistical Package for the Social Sciences (SPSS). The Alpha coefficient, developed by Cronbach and Meehl (1955), is generally used in acquiring reliability in terms of internal consistency regarding a single test, especially in combined measurements. Cronbach's Alpha (α) was developed to measure the internal consistency or scale; it is always supposed to fall between 0 and 1 (Gliem, J.A. and R.R. Gliem., 2003). Cronbach's alpha tests to see if multiple-question Likert scale surveys are reliable. These questions measure latent variables hidden or unobservable variables like a person's conscientiousness, neurosis, or openness. These are very difficult to measure in real life. Cronbach's alpha will tell you how closely related a set of test items are as a group. Cronbach's alpha-coefficient is the most frequently used metric for determining the overall reliability.

The formula for Cronbach's alpha is:

$$\alpha = \frac{N\overline{c}}{\overline{v} + (N-1)\overline{c}} \qquad (3.6)$$

Where:

N = the number of items.

$\bar{c}$ = average covariance between item-pairs.

$\bar{v}$ = average variance.

Table 3.2 below shows a rule of thumb for interpreting alpha for dichotomous questions (i.e., questions with two possible answers) or Likert scale questions.

Table 3.2 Cronbach's Alpha Range Limit

Cronbach's alpha	**Internal consistency**
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

3.9. Ethical Considerations

This study was conducted according to the ethical guidelines of research requirements. For this purpose, during data collection n and interview periods using formal letters obtained from the Jimma Institute of Technology postgraduate and research program office, they are then submitted to different responsible bodies for official permissions. The researcher asked the participants to use any recorder and photo camera and promised them not to disclose their photograph and name without their consent. According to the citation rules, the theories and opinions put forward in the theoretical framework were correctly referenced. The kinds of literature used were analyzed concerning the authors' works.

3.10. Data Quality Assurance

Data required to investigate the effectiveness of construction leadership and the effects on building construction projects performance was collected from Hawassa city building construction sites. No invalid data was used to generate a solution for the problems that were going to be solved by the researcher. There were no misleading conclusions, and every data analysis was analyzed using necessary information and technics. The final output includes both the positive and negative impacts of the case. In order to keep the data quality, the following measures were taken:

- Take a daily diary in each data collection process and Make a daily check after collecting data.
- The equipment used for the study, such as the tape recorder (mobile), was checked before any data was collected.
- The training was given for the data collectors regarding the data collecting.

3.11. Plan for Dissemination of Findings

The study mainly concentrates on academic purposes that the Jimma University enrolls; the finding was presented publicly and defended in examiners' presence. Also, the final report was disseminated to Jimma University, Jimma Institution of Technology postgraduates research and publication director office, and published in an international journal of construction engineering and management.

CHAPTER 4

RESULTS AND DISCUSSIONS

This chapter focuses on the results and discussion of data obtained from the structured questionnaires, interviews, and site visits (observations) gained from those active building construction sites in Hawassa city. The data obtained from those different construction sites with respect to the research are analyzed and presented in order to achieve the objectives.

4.1. General Information From Questionnaire Response

In this research, a total of fifty three (53) questionnaires were distributed to 16 projects, and 49 (92.45%) of questionnaires were returned from those; 4 (7.54%) to the clients, 12 (26.64%) to the consultants, and 37 (69.81%) for contractors. The response rate for clients, consultants and contractors were 4 (100%); 10 (83.33%) and 35 (94.59%). Table 4.1 below shows the summary of questionnaires distributed and their response rate.

Table 4.1 General Information from Questionnaire Response

Category	Number of Questionnaires Distributed		Number of Questionnaires Returned	
	Number	Percentage (%)	Number	Percentage (%)
Clients	4	7.54%	4	100%
Consultants	12	24.64%	10	83.33%
contractors	37	69.81%	35	94.59%
Total	53	100%	49	92.45%

4.1.1. Profile of Survey Respondents

This section describes the first section of the questionnaire, which consists of background of respondents and has three components: work position in the company, job experience in the construction, educational background and number of executed projects by respondents throughout their working years. When determining the availability of human resources in the construction sector, this information is useful; it also assists in determining the extent to which the construction is led by competitive personnel. Based

on their knowledge and experience, this is beneficial; in turn, it assists in collecting more reliable data from the sector.

❖ **Work position of respondents**

The classification of the work position of the respondents includes Project managers(PM), Site engineers(SE), Office engineers(OE), Resident engineers(RE), Forman's, Site supervisors(SS), and others. From the result obtained, 14.28% of the respondents were project managers, 24.48% of the respondents were site engineers, 28.57% of the respondents were office engineers, 14.28% of the respondents were resident engineers, 2.04% of the respondents were Forman's, and 16.32% of the respondents were site supervisors.

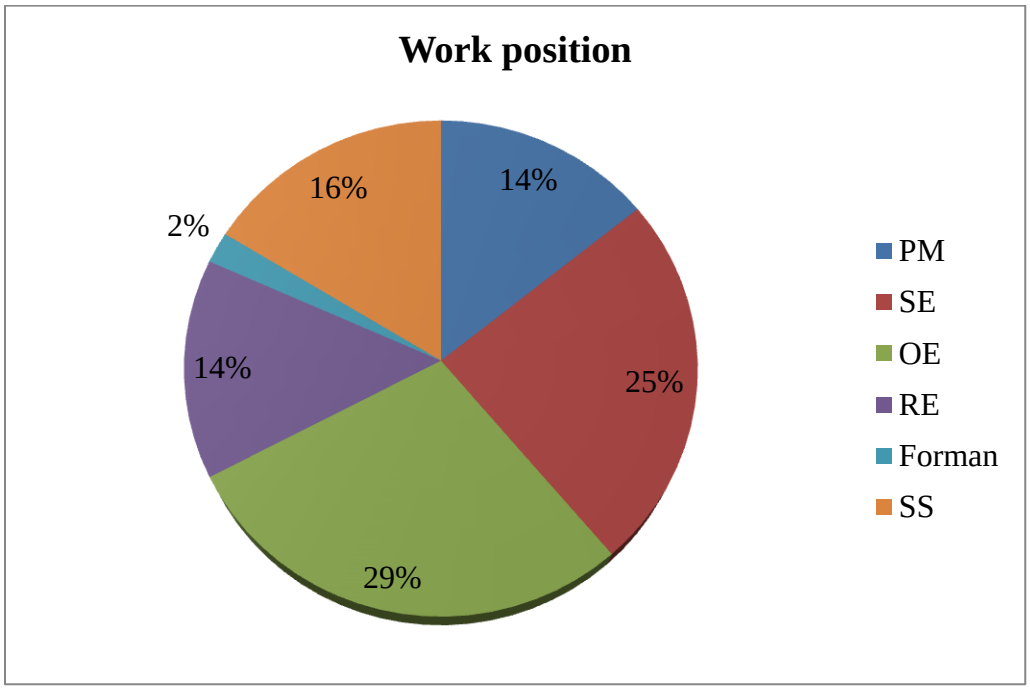

Figure 4.1 Work Positions of the Respondents

❖ **Job experience of respondents**

The classification of the work experience of respondents divided into four different time frames. Hence, as shown in Figure 4.2, 36.73% of the respondents have an experience which was < five years, 59.18% of the respondents have an experienced between 5-10 years and 4.08% of the respondents have experienced was in between 15-25 years.

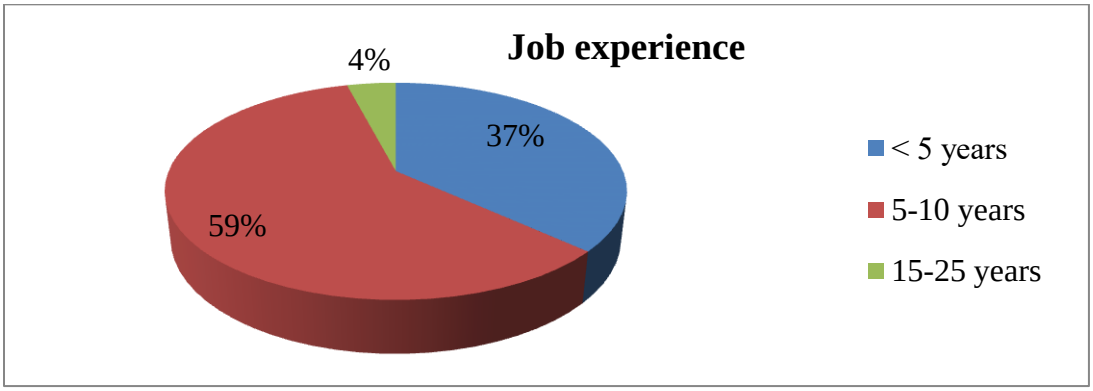

Figure 4.2 Job Experiences of the Respondents

❖ **Educational background of respondents**

The classification of the educational background of respondents is divided into three sections: BSc, MSc, and advanced diploma. As indicated in Figure 4.3, from those respondents, 48.97% were covered by BSc, MSc covered 48.97%, and the other 2.04% were covered by advanced diploma.

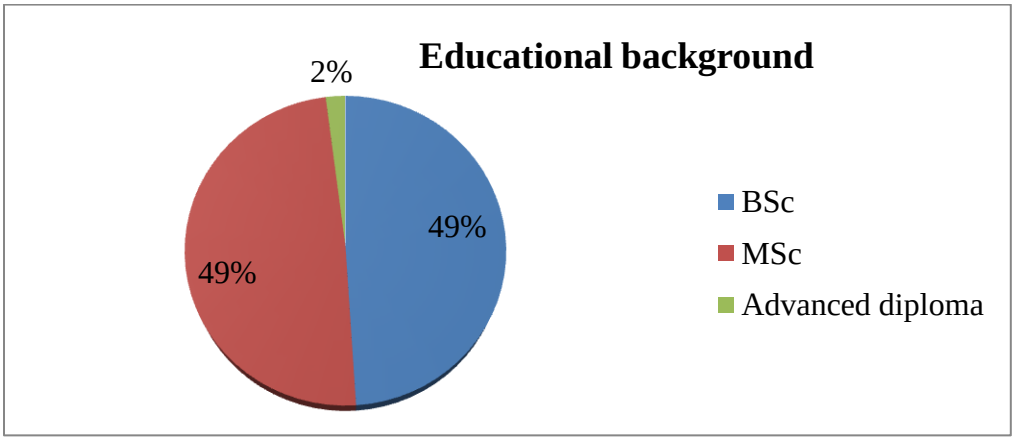

Figure 4.3 Educational Backgrounds of the Respondents

❖ **Number of executed projects by respondents**

As indicated in Figure 4.4, the numbers of executed projects by respondents were divided into four categories: two projects or less, 2-4 projects, 4-6 projects and more than six projects. So, from those respondents, 2.04% executes two projects or less, 24.48% executes 2-4 projects, 36.73% executes 4-6 projects and the remaining 36.73% executes more than six projects.

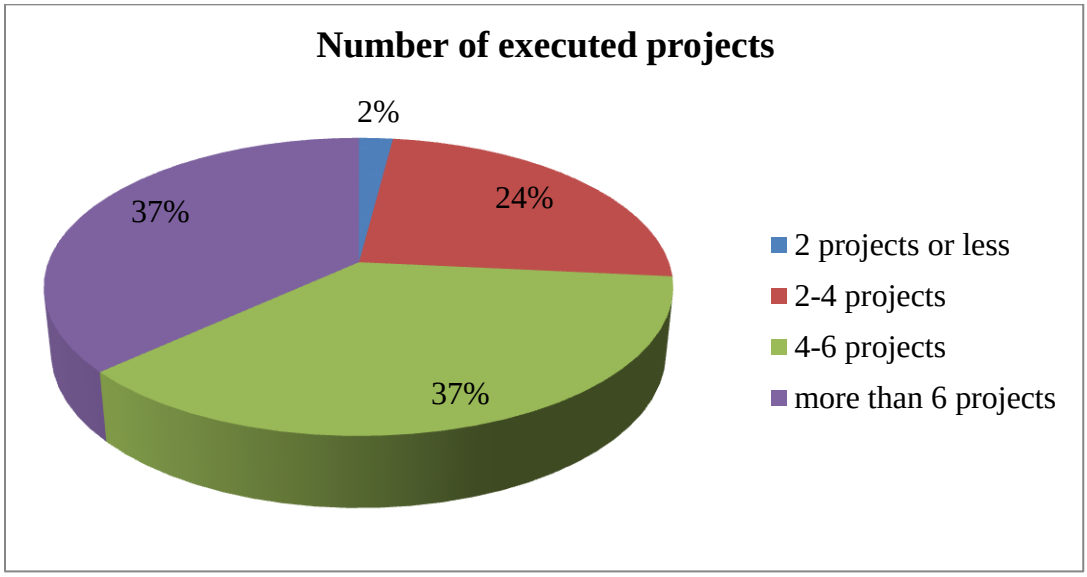

Figure 4.4 Number of Executed Projects

4.2. Construction Leadership Skills or Practices to Lead Construction Projects Effectively

In this section, construction leadership skills or practices to lead construction projects effectively on building construction projects was indicated according to the level of significance to the respondents. Figure 2.1 on the literature review shows the functions of management needed to lead projects to the required level with better performance effectively. There are twelve (12) major Skills or practices to lead construction projects effectively. Those major skills are listed below, which are identified from literature reviews.

4.2.1. Planning Skill

Planning is the most important duty when it comes to managing any project. Construction leaders need to identify ahead to minimize future problems that might jeopardize the organization's objectives and prioritize activities. On the other hand, outstanding leaders always check their resources to see whether they are in line and assign the correct resource to the proper position to enhance performance. Ten abilities related to planning fall under this main skill area, and they have been compiled from various kinds of literature.

Table 4.2 below shows different skills or practices under the planning category. Preparing meetings to discuss the plan with project team members was ranked first in this category with an RII value of 0.763. Two different skills achieved ranked 2nd in this category: preparing an action plan to reach the project's goal and measuring the plan by identifying key causes, restrictions, and downstream consequences. The RII value for these two skills was 0.726. Other skills' rankings are clearly described in the table below, based on the relative importance index (RII).

As a result of the findings, it is to conclude that in the majority of building construction projects, the preparation of meetings to discuss plans and other issues with project team members was extremely well executed and that the preparation of action plans and measurements of plans in response to various causes, restrictions, and implications were also applied on the present construction projects.

Table 4.2 RII Value and Rank of Planning Skill Category

Planning skill	RII Value	Rank
Your company give more value on the preparation of action plan to reach project's objective	0.726	2
The prepared plan anticipate potential resource conflicts and indicates how these conflicts will be managed	0.697	6
Project managers notify the objectives of client, make reasonable project plan and have the ability of prediction	0.689	8
Professionals have good ability to proportionate the budget to the overall complexity of the project	0.697	6
Project deliverables are clearly identified on when they are due	0.722	4
There is any excellence on making detailed schedule which list key phases, tasks and milestones	0.685	9
Project managers are good at preparing meetings to discuss on the plan with project team members	0.763	1
project managers good at measuring of plan through identification of key causes, restrictions, and downstream	0.726	2

consequences		
Team members give priority to the project goal than fighting for personal interest	0.702	5
Managers give guidance to design teams in optimizing the performance of buildings and plants over their life.	0.681	10

Figure 4.5 below shows the ranking of skills or practices under the planning category depending on the mean scores of each skill or practice. Compared to the RII, the graph with the mean score values also shows the same ranking; this is proof that the results obtained are acceptable or reliable.

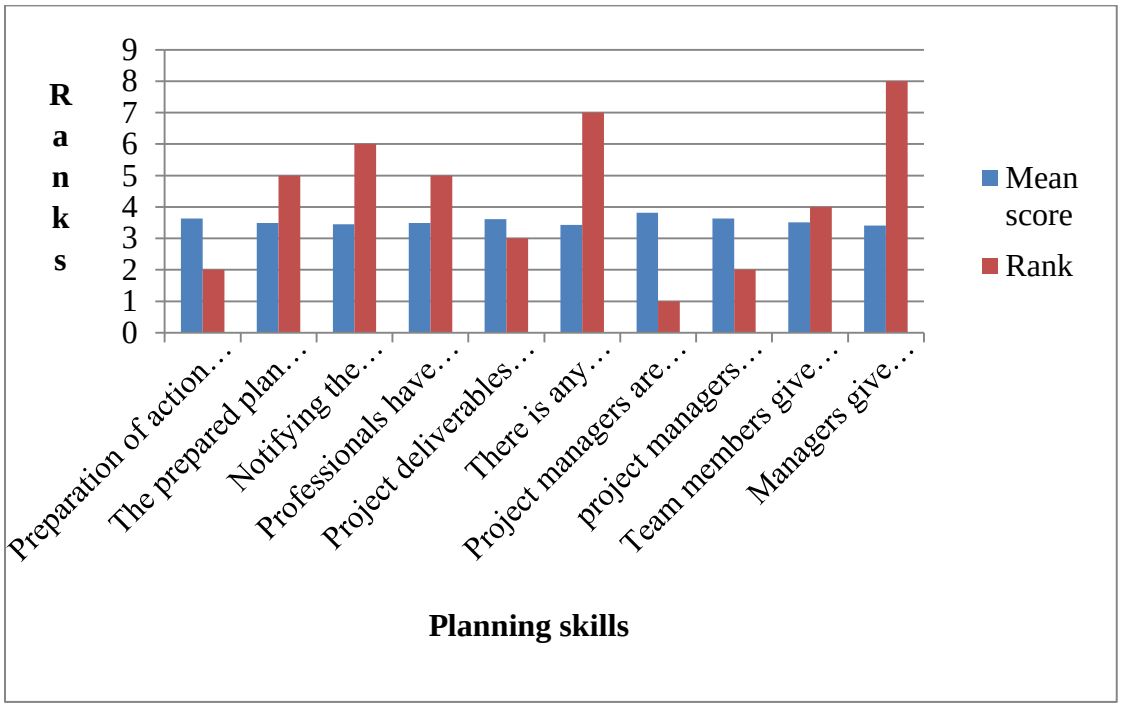

Figure 4.5 Ranks of Planning Skills Category

4.2.2. Communication Skill

The exchange of information is what communication is. Poor communication in construction projects leads to rework, failure to achieve the project aim, misapplication of resources, loss of productivity, and disagreements between parties. General conclusions were reached that poor communication is a contributing factor to the poor performance of

construction companies. Consequently, studying the communication abilities or practices used in building construction projects.

Table 4.3 below shows the ranking of different skills or practices under the communication category; from this category, meetings usually prepared with team members to explain the standard for the project was ranked 1st with an RII value of 0.726. The other skills' ranks are clearly described in the table below, depending on their RII values.

As a consequence of the findings, it is to conclude that a periodic meeting schedule was implemented in order to minimize late deliverables, and those meetings addressing project standards were also implemented on those active sites.

Table 4.3 RII Value and Rank of Communication Skill Category

Communication skill	**RII value**	**Rank**
Project manager is good at initiating communication with project team members about their expectations ,principles and sates standards for the project	0.710	4
Project leaders are good at communicating their visions clearly and set a project goals in a way that everyone can grasp	0.718	2
There is good ability by managers to listen, persuades, and understands what other's thinking	0.693	5
Meetings usually prepared with team members to explain very clearly the standards for the project.	0.726	1
There is effective communication and close coordination between stakeholders to ensure complete agreement and commitment	0.718	2

Figure 4.6 below shows the ranking of skills or practices under the communication category depending on the mean scores of each skill or practice.

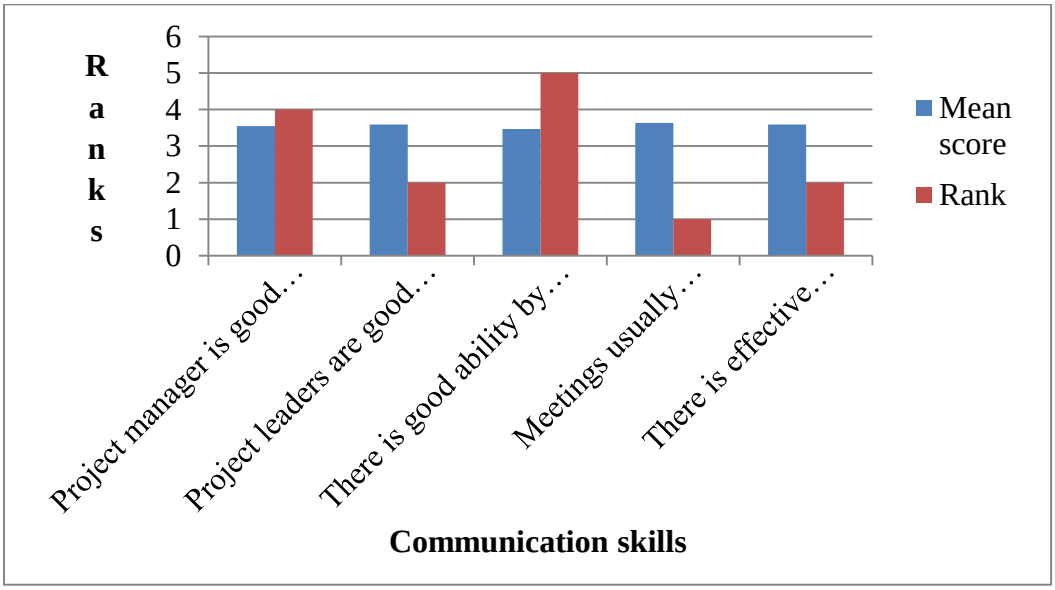

Figure 4.6 Ranks of Communication Skills Category

4.2.3. Staffing and Team Building Skill

It is essential to make effective use of human resources in building projects. The assignment of the appropriate specialists to the appropriate positions is the foundation of effective staffing and team formation. The competence and expertise of project managers and team members impact the overall performance of the project. Participants in the survey were asked about the following five practices to understand the abilities required for staffing and team building in building construction projects.

Table 4.4 below shows the ranking of skills and practices under the staffing and team-building category; from this category, project team members are motivated to execute the project and the leading/managing position of projects possessed by experienced professionals was ranked 1st jointly with RII value of 0.714. In 2nd place, team members who have complete trust in each other's skills, and abilities were ranked with an RII value of 0.697. The other skills' ranks are clearly described in the table below, depending on their RII values.

From the result, it can be understood that project team members are motivated to execute projects. Also, experienced professionals were working on projects to attain the intended objectives of the projects.

Table 4.4 RII Value and Rank of Staffing and Team Building Category

Staffing and team building skill	RII value	Rank
The leading/managing position of projects possess by experienced engineers and there is no doubt on the qualifications of project team members	0.714	1
Your projects has sufficient human resources allocated for quality management in your project	0.636	6
Your team members have complete trust on each other's skills and abilities and there are trainings that ensures members to do their jobs well and safe	0.697	3
Your company's learning and knowledge sharing culture is exemplary	0.653	5
There is suitable working environment that welcomes everyone	0.669	4
Project team members are motivated to execute the project	0.714	1

Figure 4.7 below shows the ranking of skills or practices under the staffing and team-building category depending on the mean scores of each skill or practice.

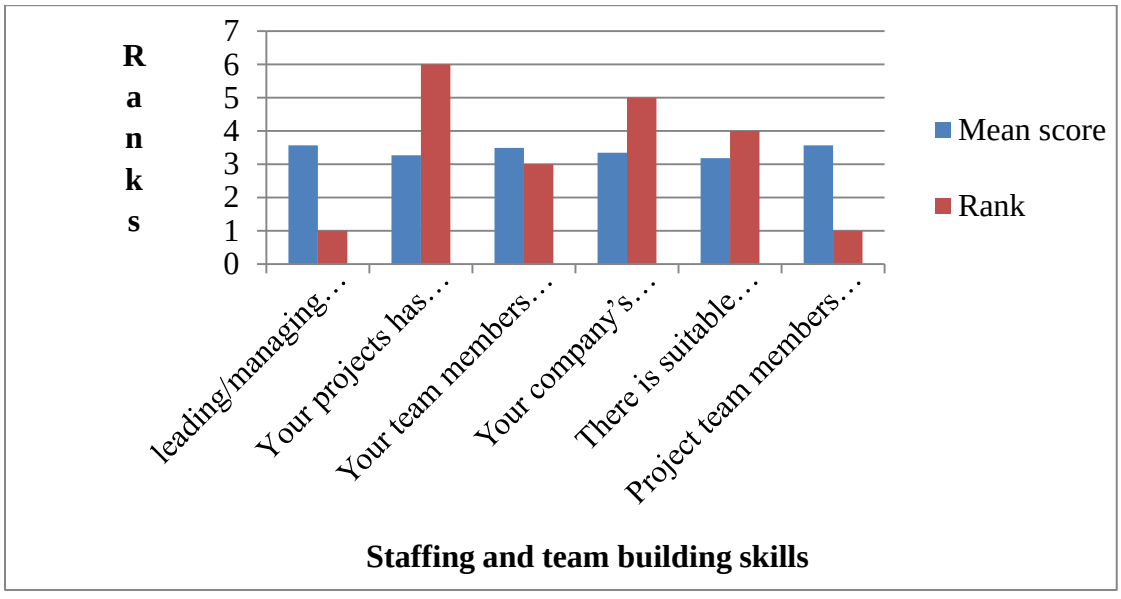

Figure 4.7 Ranks of Staffing and Team Building Category

4.2.4. Time Management Skill

Time is critical in construction projects. Projects consume additional resources unless they are completed with the specified time. Usually, projects have a problem keeping the contract period. Time control of projects can be improved by working on individuals' time management practices. Three competencies regarding time management are organized from kinds of literature.

Table 4.5 below shows the ranking of practices under the time management category; from this category, developing a realistic schedule and identifying activities in a work breakdown structure (WBS) format was ranked 1st with an RII value of 0.775. In this category, clear identification and allocation of available resources to the project tasks ranked in 2nd place with an RII value of 0.751. Whereas project's time is not wasted by using for own business was ranked in 3rd place with an RII value of 0.702.

Consequently, it is clearly understood that realistic timetables were utilized to depict the activities throughout the project using work breakdown structures. The projects also benefited from clear resource identification and allocation.

Table 4.5 RII Value and Rank of Time Management Category

Time management skill	RII value	Rank
Project leader's good at developing a realistic schedule and identify activities in a work breakdown structure (WBS) format	0.775	1
Did the project team uses project's time to run their own business or for their benefits	0.702	3
There is clear identification and allocation of available resources to the project tasks at the right time	0.751	2

Figure 4.8 below shows the ranking of skills or practices under the time management category depending on the mean scores of each skill or practice.

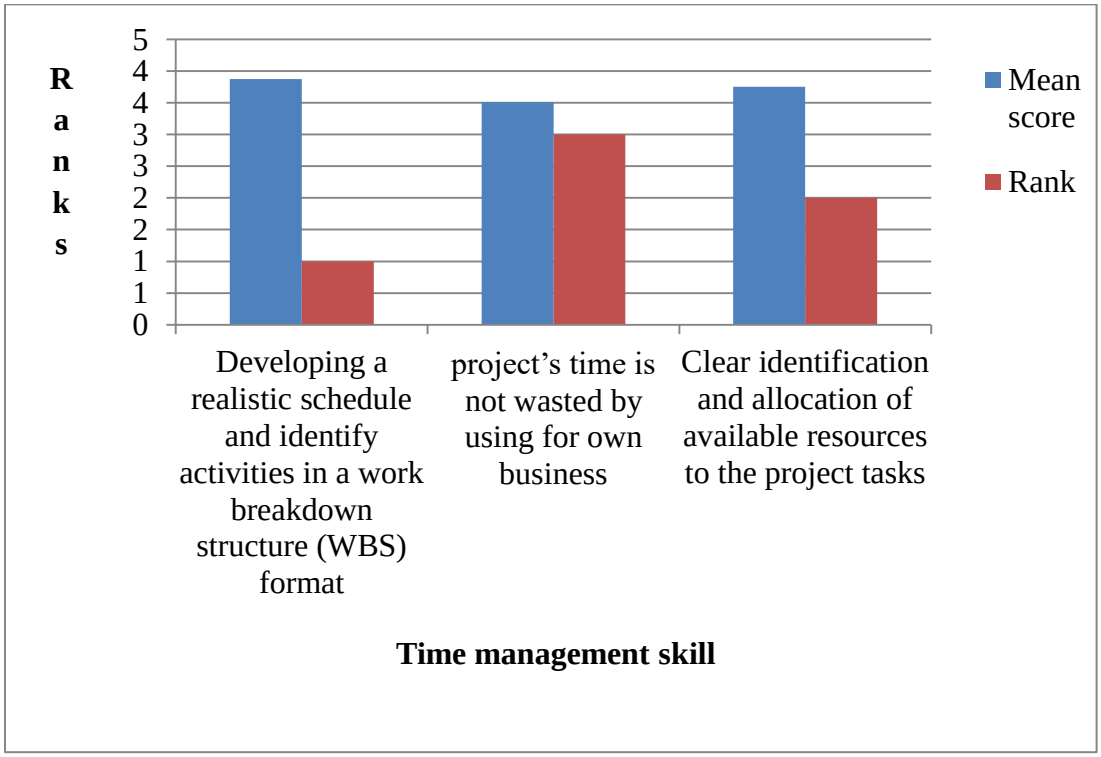

Figure 4.8 Ranks of Time Management Category

4.2.5. Effective Technical Management Skill

Because a project is not a one-time event, it requires effective and technical administration, scheduling, funding, and monitoring in order to achieve the desired result. These are the kind of tasks that engineers and construction project managers are supposed to do.

Table 4.6 below shows the ranking of practices under the effective technical management category; this category control system is checked regularly to ensure the subcontractors' invoices that are approved for payment are accurately reflected in the system was ranked 1st with an RII value of 0.791. In this category, fairness and respect in treating subcontractors are ranked in 2nd place with an RII value of 0.759. The other skills' ranks are clearly described in the table below, depending on their RII values.

Consequently, it can deduce that the regulating system for payments to subcontractors was effective and accurate throughout the project. Treating subcontractors fairly with respect was also carried out fully on the projects where the survey was conducted.

Table 4.6 RII Value and Rank of Effective Technical Management Category

Effective technical management skills	RII value	Rank
Project manager takes overall project responsibility and accountability, in managing the technical performance of the project,	0.738	3
project team members who participate in your project hold accountable for their technical performance and they supported and coached to help them meet their commitments in the future	0.702	10
Appropriate guidance sufficiently provided to design team so they know the standards upon which they should base their design.	0.706	9
There is a trend of working with experienced engineers, construction managers and code officials to resolve code conflicts in your project.	0.718	6
There are periodic and as-needed meetings with the project technical team effectively exercised to assess how the project is proceeding technically, give participants an opportunity to voice any concerns	0.734	4
Project team members encouraged and motivated to counsel on difficult technical issues	0.722	5
The management of financial part of your project is effective and sound control system used	0.718	6
Project managers use their position to determine if the labor costs charged to the project are reasonable compared to value received	0.714	8
Your project financial reports carefully checked with the concern of reducing the incidences of invalid charges appearing	0.689	12
Your project control system checked regularly to ensure subcontractors invoices that approved for payment are accurately in the system	0.791	1
There is fairness and respect on treating subcontractors	0.759	2
Field leaders are good to ensure that all efforts are cost effective and a spirit of financial stewardship is part of the work team's culture	0.697	11
Project managers good at practicing quality management principles	0.640	13

Figure 4.9 below shows the ranking of skills or practices under the effective technical management category depending on the mean scores of each skill or practice.

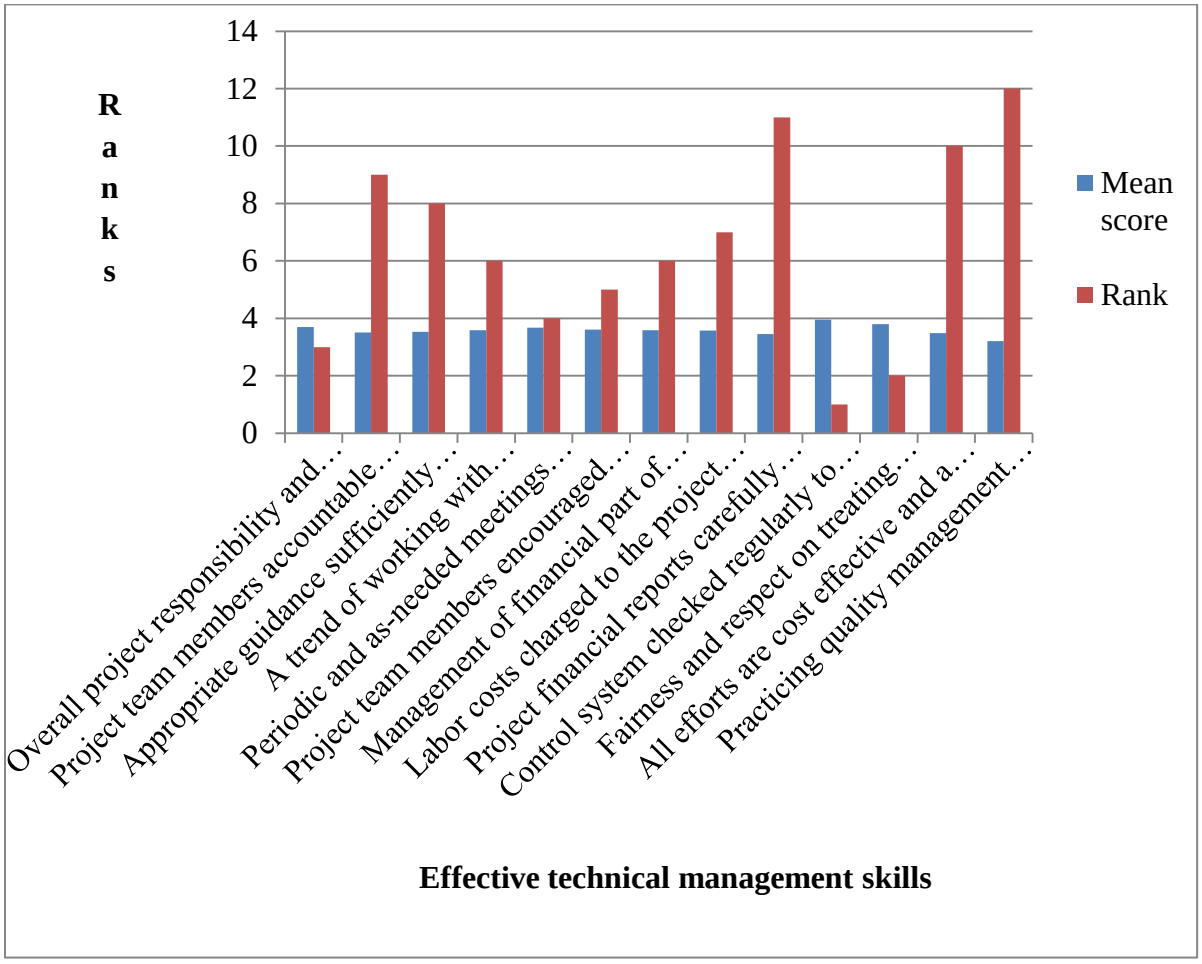

Figure 4.9 Ranks of Effective Technical Management Category

4.2.6. Problem Solving and Informed Judgment Skill

The capacity to assess adverse situations or issues, determine their fundamental causes, and devise effective solutions for the challenges is called problem-solving aptitude. Making an informed judgment means choosing something based on facts rather than emotions. Generally, the building presents difficulties or encounters difficulties. As a construction project leader, it is critical to analyze the root reasons for failure and make the appropriate choice at the proper time.

Table 4.7 below shows the ranking of practices or skills under the Problem Solving and Informed Judgment category; from this category, effectiveness in using reliable data and information was ranked 1st with an RII value of 0.783. In this category, construction projects that are good at serious supervision ranked 2nd place with an RII value of 0.767. The other skills' ranks are clearly described in the table below, depending on their RII values.

As a consequence of the findings, it is clear that employing accurate data and information in conjunction with rigorous supervision was utilized to execute the projects to meet their objectives.

Table 4.7 RII Value and Rank of Problem Solving and Informed Judgment Category

Problem Solving and Informed Judgment skill	**RII value**	**Rank**
Construction companies are good on solving great majority of problems without changing a due date, an end budget or quality standards.	0.624	5
When failures happens ,it's reviewed thoroughly and solved using practical solution	0.730	4
Construction projects are good at serious supervision	0.767	2
Project managers are good at problem definition, and decision making for problems	0.746	3
There is effectiveness on using reliable data and information from others and own experience to make decisions	0.783	1

Figure 4.10 below shows the ranking of skills or practices under the problem solving and informed judgment category depending on the mean scores of each skill or practice.

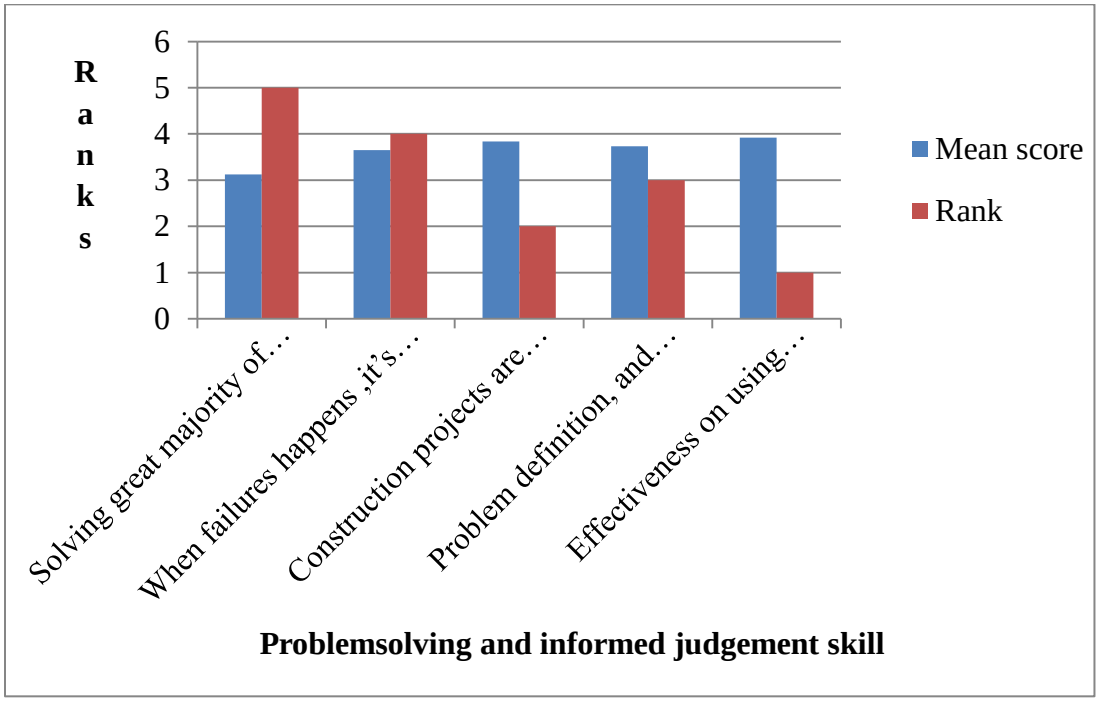

Figure 4.10 Ranks of Problem Solving and Informed Judgment Category

4.2.7. Integrity Skill

Integrity is the practice of being honest and showing a consistent and uncompromising adherence to strong moral and ethical principles and values, or it is the quality or state of being complete or undivided.

Table 4.8 below shows the ranking of practices or skills under the integrity category; from this category, project manager and team members show up on time was ranked 1st with an RII value of 0.746; and in 2nd place, the Team members in the project taking their responsibility for setting ethical standards was ranked with an RII value of 0.722. Whereas the others like members in a project focus on their performance and commitment to fight corruption were ranked 3rd and 4th with RII values of 0.710 and 0.706, respectively.

As a consequence, it is obvious that time management of project team members as well as the project manager, as well as taking responsibility for ethical standards, were thoroughly applied

Table 4.8 RII Value and Rank of Integrity Category

Integrity Skill	RII value	Rank
The project manager and team members show up on time	0.746	1
Members in a project give focus on their performance	0.710	3
Team members in the project taking their responsibility for setting ethical standards	0.722	2
Project leaders shows their commitment to fight corruption	0.706	4

Figure 4.11 below shows the ranking of skills or practices under the integrity category depending on the mean score of each skill or practice.

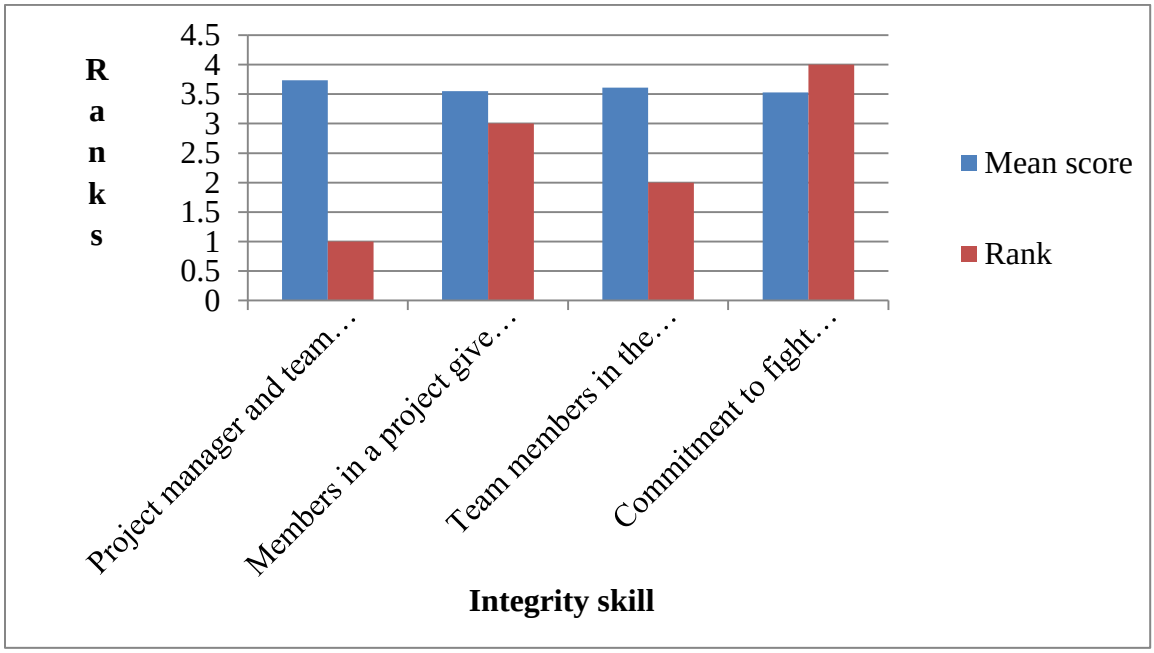

Figure 4.11 Ranks of Integrity Category

4.2.8. Decision-Making Skill

One of the frequent processes in construction projects is decision making. There are decisions in all stages of construction from beginning to end. Usually, the process is complicated, especially for civil engineering projects. Generally, decision-making demands a high level of knowledge and experience.

Table 4.9 below shows the ranking of practices or skills under the decision-making category; from this category, decisions made based on the information and the identification of available contractual obligations, standards, and codes was ranked 1st with an RII value of 0.763. In 2nd place, decisions regarding claim and payment issues made in a fast way were ranked with an RII value of 0.710. The other skills' rank is clearly described in the table below, depending on the RII values.

As a result, it is apparent that judgments were made utilizing information, standards, codes, and contractual obligations, and that claims and payments were also handled properly throughout the projects.

Table 4.9 RII Value and Rank of Decision Making Category

Decision making Skill	RII value	Rank
Opinion forms and decisions made based on information and on identification of available contractual obligations, standards and codes.	0.763	1
Decisions regarding claim and payment made in fast way	0.710	2
Complete and accurate data tried to be obtained before taking action	0.693	3
There is a trend of examining logic and biases also check with others	0.681	5
Decision makers think thoroughly about the consequences of their decisions	0.689	4

Figure 4.12 below shows the ranking of skills or practices under the decision-making category depending on the mean scores of each skill or practice.

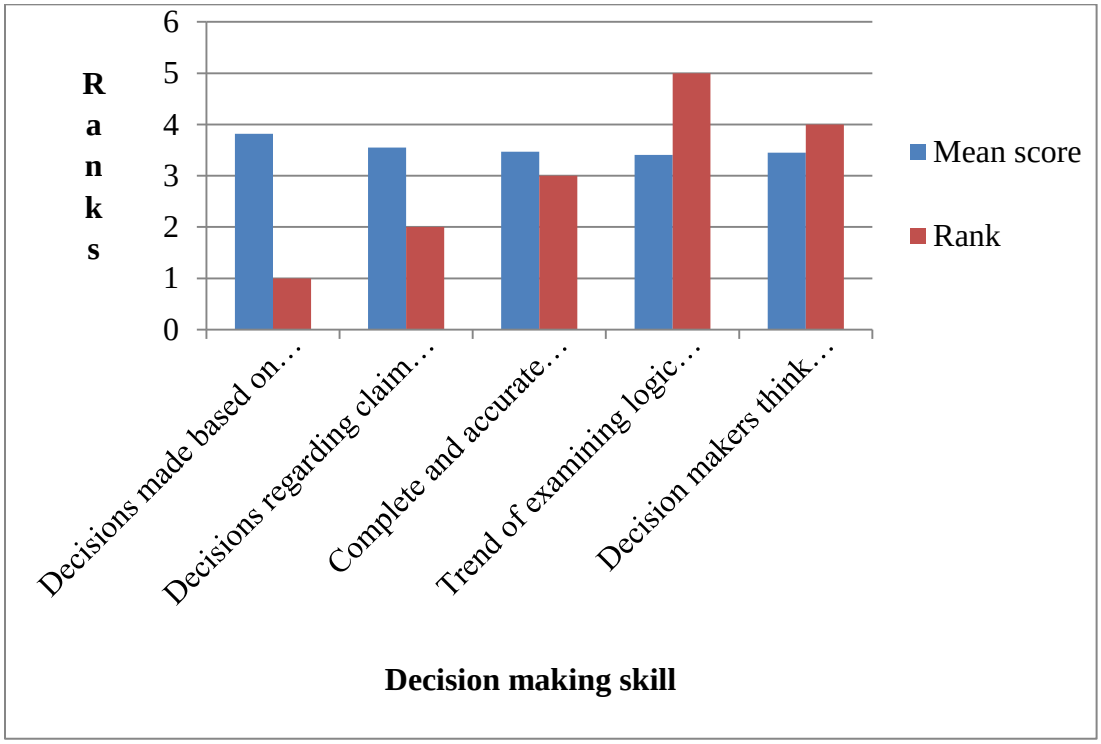

Figure 4.12 Ranks of Decision Making Category

4.2.9. Conflict Resolution Skill

In general, conflicts may occur in projects for different reasons. The main reasons for conflict in construction are behavioral problems, contractual problems, and technical problems.

Table 4.10 below shows the ranking of practices or skills regarding the conflict resolution category; from this category, Project managers are good at presenting their position and justify in neutral language was ranked 1st with an RII value of 0.759 and in 2nd place attempts to identify the real issues underlying the conflict was ranked with RII value of 0.746. The other skills' ranks are clearly described in the table below, depending on the RII values.

From the result, it is understood that project managers clearly describe things regarding their projects, positions and identifying conflicts were undertaken seriously throughout the projects.

Table 4.10 RII Value and Rank of Conflict Resolution Category

Conflict resolution Skill	RII value	Rank
Project leaders good at recognize when negotiation is taking place and the styles to create a win-win situation that does not impact the project.	0.693	7
Project managers are good at actively listening to all points of view and then clarify by restating the other option	0.730	3
Project managers are good at presenting their position and justify in neutral language	0.759	1
Project managers are flexible and willing to collaborate	0.730	3
There is excellent communication in your project that could resolve conflict	0.722	6
Project managers have the competency to negotiate to resolve conflicts	0.730	3
Project managers attempts to identify the real issues underlying the conflict	0.746	2

Figure 4.13 below shows the ranking of skills or practices under the conflict resolution category depending on the mean scores of each skill or practice.

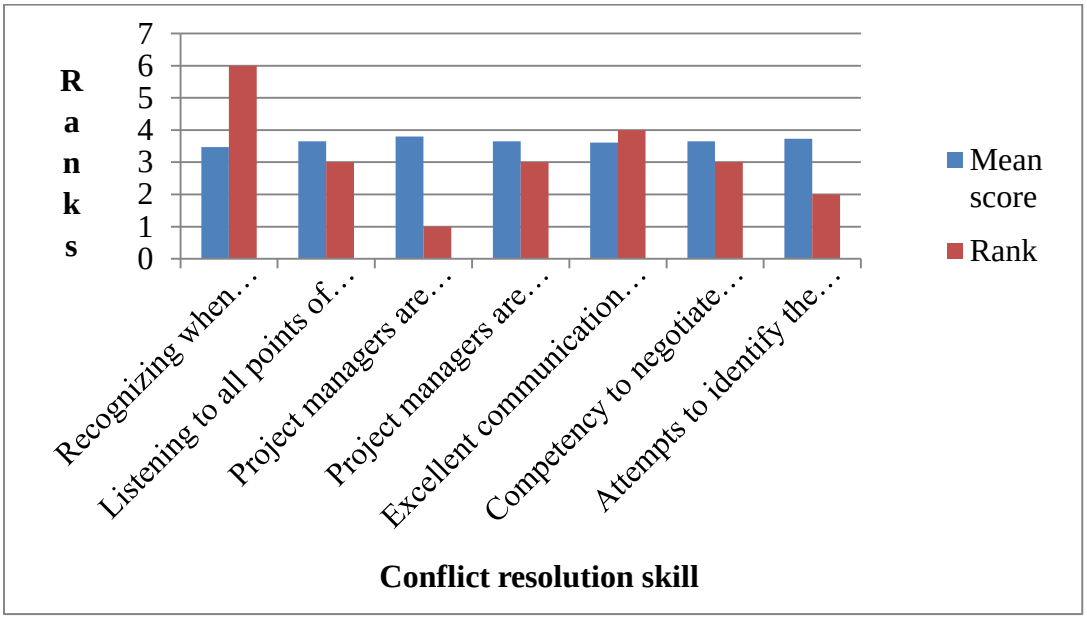

Figure 4.13 Ranks of Conflict Resolution Category

4.2.10. Monitoring For Results Skill

Monitoring for results means measuring or checking the status/output of the project compared with its objective.

Table 4.11 below shows the ranking of practices or skills for monitoring for results category; from this category, Project managers and supervisors have a habit of getting out of their office and actively observing work progress and collecting performance information was ranked 1st with an RII value of 0.787 and in 2nd place analyzing the information provided by own staff, customer, business partners and other feedback as meaningful and useful were ranked with an RII value of 0.755. The other skills' ranks are clearly described in the table below, depending on the RII values.

From the result, it is understood that the project manager and supervisors in the project were actively observing work progress and performances of the project continuously and also took information's gained from staff and other partners as meaningful and useful to attain the objectives needed.

Table 4.11 RII Value and Rank of Monitoring For Results Category

Monitoring for results Skill	RII value	Rank
Project manager is effective in evaluating performance	0.742	3
Project managers and supervisors have a habit of getting out of their office and actively observe work progress and collects performance information.	0.787	1
Project leaders are good at analyzing the information provided by own staff, customer, business partners and other feedback as meaningful and useful. Acts on that information to improve performance	0.755	2
Companies‟ way of controlling the execution of the projects is systematic based on planning.	0.697	6
Project activities coordinated effectively	0.738	4
The quality assessment system in the organization is sound	0.710	5
Your project undertake safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations	0.681	7

Figure 4.14 below shows the ranking of skills or practices under monitoring for results category depending on the mean scores of each skill or practice.

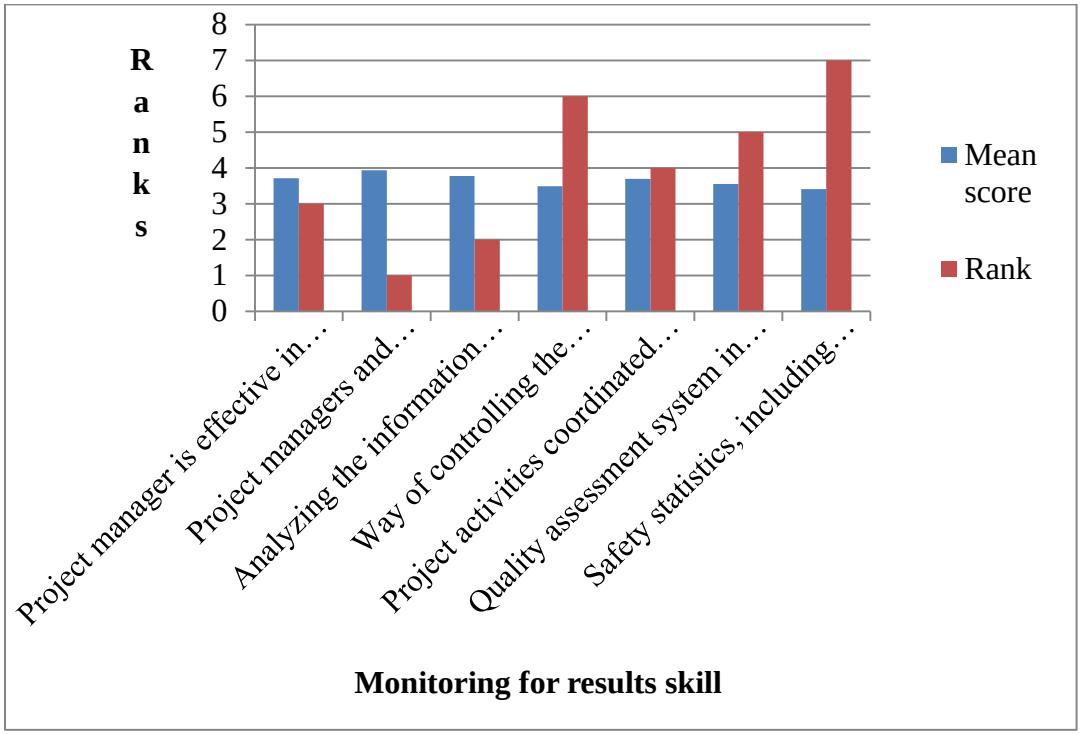

Figure 4.14 Ranks of Monitoring For Results Category

4.2.11. Sense of Responsibility Skill

Sense of responsibility connotes the awareness of one's obligations; it's like doing what one is supposed to do. A strong sense of responsibility influence how an individual carries out tasks and how one makes an attempt and undertakes to achieve all of one's desires in the item for which they are working. Construction projects seek leaders responsible for their and teams' performance, including their health and safety.

Table 4.12 below shows the ranking of practices or skills under the sense of responsibility category; from this category, ensuring the safety and well-being of its personnel in all prevention measures designed against fire, accident, or any other hazards was ranked in 1st place with RII value of 0.722. In this category, team members are active in taking responsibility for their actions in the project and good management, which is committed to setting and implementing safety and health program jointly were ranked in

2nd place with an RII value of 0.702. The other skills ranks are clearly described in the table below, depending on their RII values.

From the result, we can understand that ensuring the safety and well-being of personnel working on the projects were given serious attention, and team members who are active to take responsibility for what they have done and have good management in implementing safety and health programs throughout the projects.

Table 4.12 RII Value and Rank of Sense of Responsibility Category

Sense of Responsibility Skill	RII value	Rank
Construction projects including yours has good management which committed on setting and implementing safety and health program	0.702	2
Most contractors are good on ensuring the safety and well-being of its personnel in all prevention measures designed against fire, accident or any other hazards	0.722	1
Professional who involved in this project takes responsibility for own and team's performance, including failures or problems.	0.697	4
Your team members are active to take responsibility responsible for their actions in the project	0.702	2
In many construction projects, project managers and the top management take actions to support the member's responsibilities toward his/ her family affairs.	0.685	6
If failure happens, blaming on others immediately to make decisions is very common	0.689	5

Figure 4.15 below shows the ranking of skills or practices under the sense of responsibility category depending on the mean scores of each skill or practice.

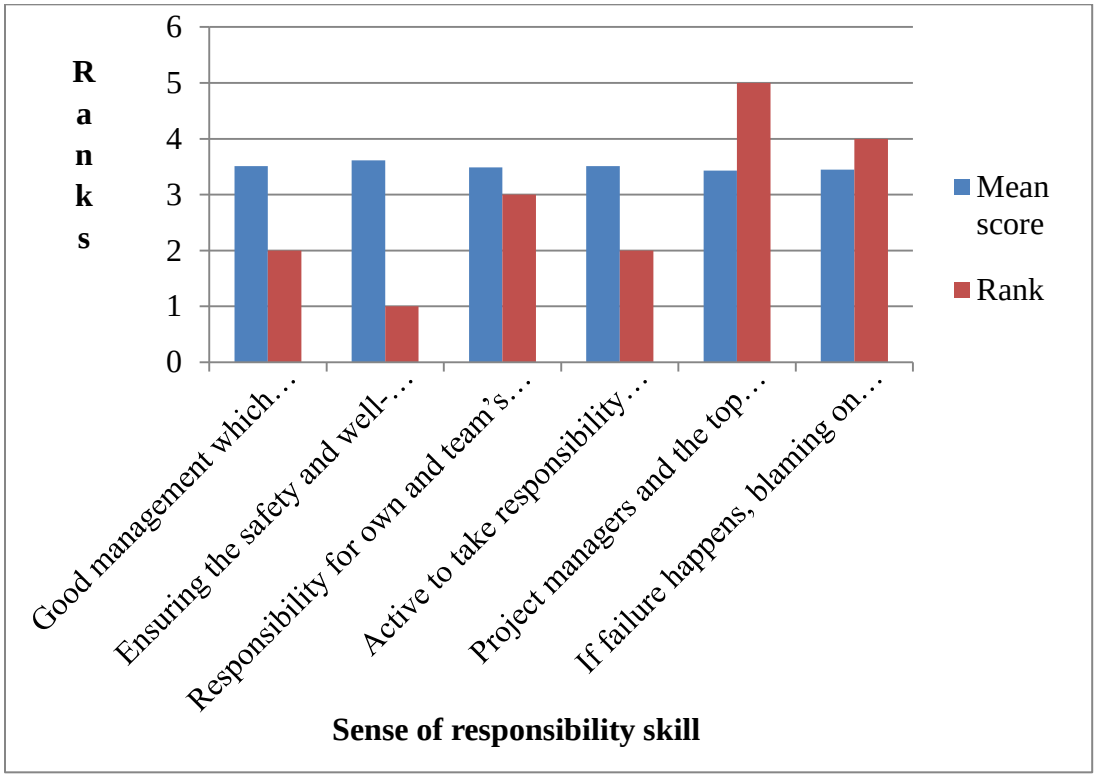

Figure 4.15 Ranks of Sense of Responsibility Category

4.2.12. Ethics

Ethics is the norm or behavior to abide and respect for the profession. Engineers should act and behave like what is expected from them. Demonstrating their knowledge without negligence is expected from them. Construction projects in developing countries are blamed for corruption.

Table 4.13 below shows the ranks and main practices regarding ethics; from this category, Professionals consider ethics as moral reasoning behind the making of decision was ranked 1st with RII value of 0.746, and in 2nd place, the leader does not let standards be violated with impunity was ranked with RII value of 0.718. The other skills ranks are clearly described in the table below, depending on their RII values.

From the result, it is understood that decisions were made depending on ethical reasoning; leaders in the projects do not let standards be violated with impunity. Anyone who violates standards will be penalized for their acts.

Table 4.13 RII Value and Rank of Ethics Category

Ethics	RII value	Rank
Professionals consider ethics as moral reasoning behind making of decision	0.746	1
The leader does not let standards be violated with impunity	0.718	2
There are specific codes of ethics which used to governing the conduct of Individuals	0.689	3
The implementation of code of ethics for professionals is satisfactory	0.632	7
There is good culture at dealing by morality depend on a specific system of norms through their day practice	0.681	4
Many construction firms choose to bid the job as is even though the drawings, specification are poor or wrong	0.653	6
Compromising quality in order to increase profit is noticeable in our construction projects which handled by local contractor and consultant	0.661	5

Figure 4.16 below shows the ranking of skills or practices under the Ethics category depending on the mean scores of each skill or practice.

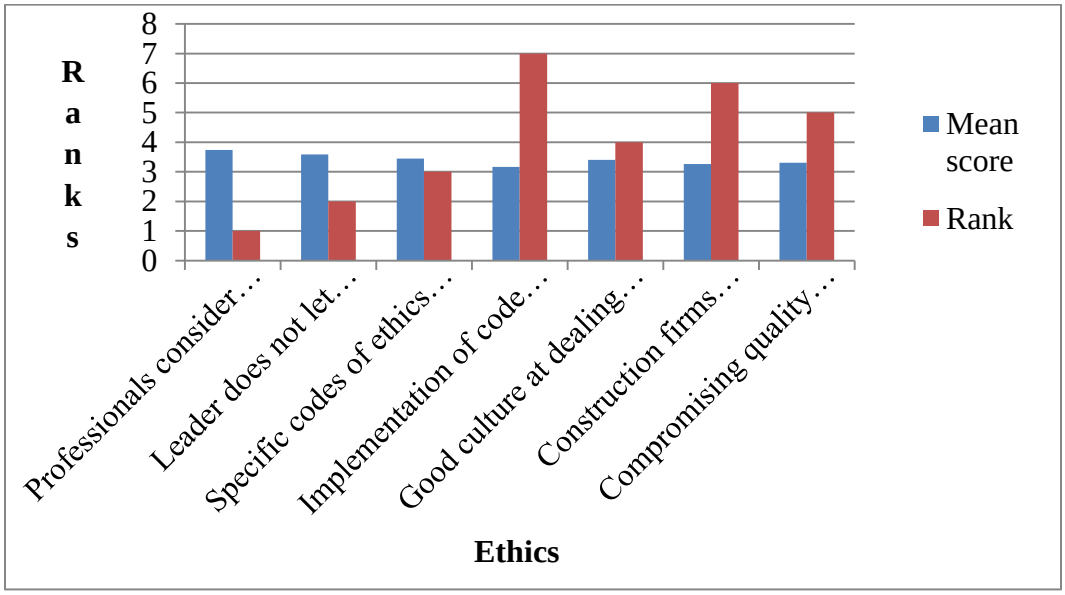

Figure 4.16 Ranks of Ethics Category

4.2.13 Summary on Construction Leadership Skills or Practices

This section mainly focuses on the first specific objective, which was to assess the current practice of construction leadership practices and effectiveness in building construction projects.

Table 4.14 summarizes the twelve skills or practices to lead construction projects based on respondents' feedback on their application or exercises in building construction projects and gives a rank based on their average RII values. The rank was shown depending on the practicability of those skills based on the respondents' opinions. From those categories under skills or practices needed to lead construction projects' time management was ranked 1st with an average RII value of 0.742. In 2nd place, monitoring for results and Problem Solving and Informed Judgment jointly were ranked with an average RII value of 0.730. The other skills rank was clearly described in the table below, depending on their average RII values.

From the entire eighty (80) skills or practices which are grouped under twelve categories that are needed to lead construction projects effectively checking regularly invoices that are approved for payment to subcontractors and the habit of project managers and supervisors to get out of their office to actively observe work progress and collects performances of activities throughout the project were mostly executed practices as compared with that of other practices.

Table 4.14 Summary on the Level of Practice and Effectiveness of Construction Leadership Skills With Their Average RII Values and Ranks

Skills to lead construction projects	Average RII value	Rank
Planning skill	0.709	8
Communication	0.719	6
Staffing and team building	0.680	12
Time management	0.742	1
Effective technical management	0.718	7
Problem Solving and Informed Judgment	0.730	2

Integrity	0.721	5
Decision making	0.707	9
Conflict resolution	0.727	4
Monitoring for results	0.730	2
Sense of Responsibility	0.700	10
Ethics	0.683	11

Table 4.15 below shows that the results from the questionnaires regarding construction leadership skills or practices to lead construction projects effectively have higher internal consistency with the Cronbach's Alpha of 0.952, which is excellent (i.e., the items under this category have relatively higher internal consistency)

Table 4.15 Reliability Statistics of Construction Leadership Skills or Practices to Lead Construction Projects Effectively

Cronbach's Alpha	**Internal consistency**	**N of Items**
0.952	Excellent	80

4.3. Success Factors For Better Performance of Construction Projects

Generally, projects are regarded as successful if they are finished on schedule, within budget, and satisfactory. These criteria are arranged based on prior research on construction performance and success.

Table 2.1 and Figure 2.3 show factor groups that affect construction project success and hinder project performances in the literature part. These success variables are classified into four subcategories: project management-related factors, project manager-related factors, supervisor-related factors, and project team-related factors.

4.3.1. Project Management Related Factors

These are factors related to the activities under the management of construction projects like planning, scheduling, organizing, constructing and monitoring. In general, they are related to the entire construction activities.

Table 4.16 below shows the ranks of success factors related to the project management category with respect to their RII values. From this category, project goal clarity was ranked 1st with an RII value of 0.800, and in 2nd place, appropriate organizational resources were ranked with an RII value of 0.787. The other success factors' rank was clearly described in the table below, depending on their RII values.

Consequently, when compared to other factors, project goal clarity and items related to organizational resources were the elements that most affected construction projects from execution according to expectations or performance of construction projects.

Table 4.16 RII Value and Rank of Success Factors Related With Project Management

Project management related factors	RII value	Rank
Proper planning or scheduling ability	0.767	3
Project goal clarity	0.800	1
Appropriate organizational resources	0.787	2
Control/monitoring mechanism	0.759	5
Risk identification effectiveness	0.685	8
Total quality management implementations	0.669	9
Safety program effectiveness	0.718	7
Comprehensive contract documentation	0.759	5
Top management support	0.767	3

Figure 4.17 below shows the ranking of success factors related to the project management category depending on the mean scores of each success factor. As the lower the graph's height, the higher with a mean score value and vice versa so, the success factors with higher mean score values are ranked 1st, and the others ranked in descending order depending on their mean score values.

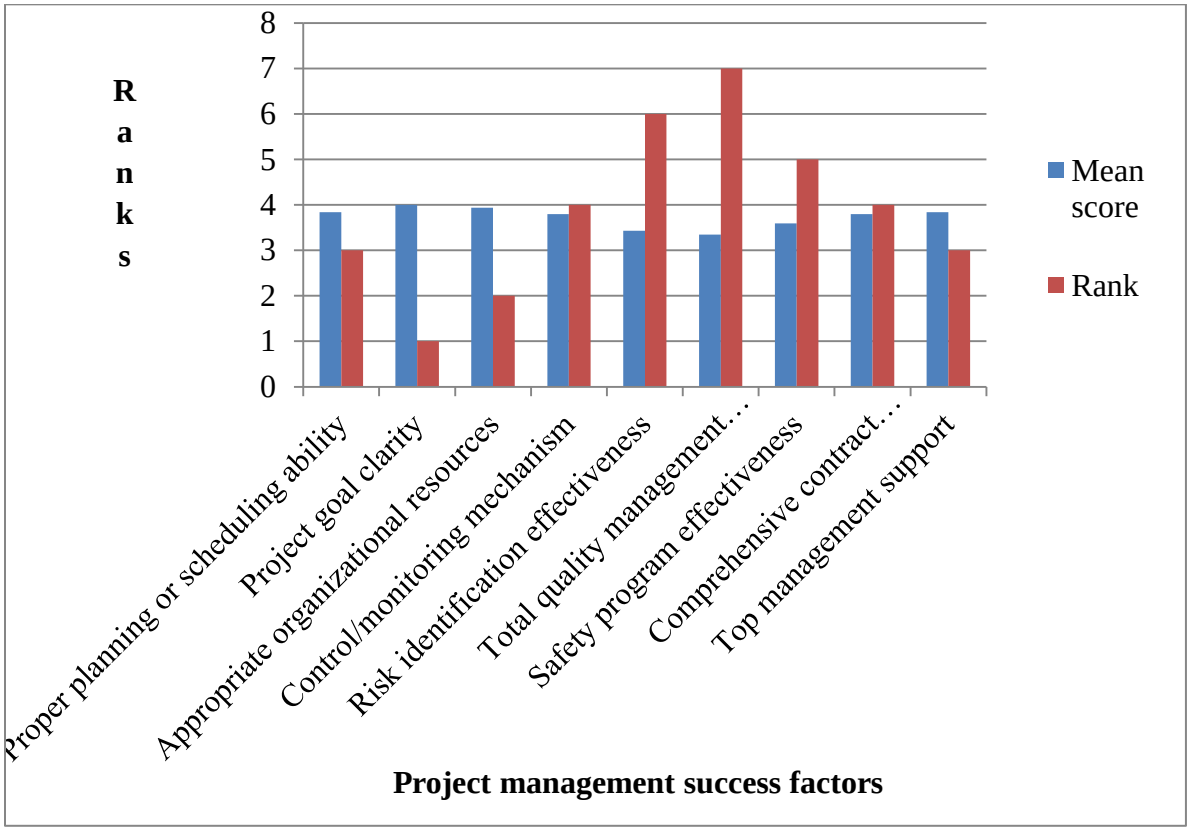

Figure 4.17 Ranks of Success Factors Related With Project Management

4.3.2. Project Managers Related Factors

These are factors related to the project managers' abilities, skills, or other related things in managing a given project.

Table 4.17 below shows the ranks of success factors related to the project managers category regarding their RII values. From this category, project manager (PM) leadership skills and technical capability and decision-making ability were ranked 1st jointly with an RII value of 0.804. In 2nd place, the team leaders' knowledge on how they can motivate the team was ranked with an RII value of 0.779. The other success factors' ranks are clearly described in the table below, depending on their RII values.

Consequently, it is clear that compared to other elements, leadership abilities, technical capability, managerial decision-making ability, and a lack of expertise in motivating project teams were the aspects that most affected the success of construction projects.

Table 4.17 RII Value and Rank of Success Factors Related With Project Managers

Project managers related factors	RII value	Rank
Project manager (PM) leadership skills and technical capability	0.804	1
PM`s commitment to meet quality, cost &time	0.759	5
PM`s early & continued involvement in project	0.751	8
Coordinating ability and rapport of project manager with owner/owner representatives	0.759	5
Decision making ability	0.804	1
Motivating skills of project manager	0.759	5
Planning, organizing and technical skill of project team leaders	0.767	4
Team leaders knowledge on how they can motivate team members	0.779	3

Figure 4.18 below shows the ranking of success factors related to the project managers category depending on the mean scores of each success factor.

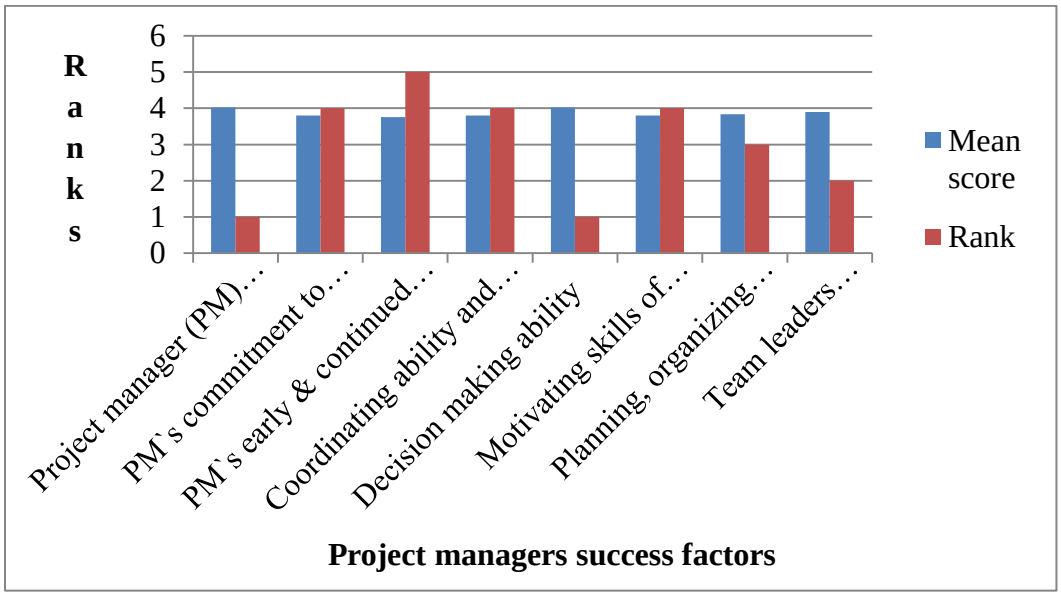

Figure 4.18 Ranks of Success Factors Related With Project Managers

4.3.3. Factors Related With Supervisors

These factors are related to supervision and controlling activities and resources throughout the entire working environment.

Table 4.18 below shows the ranks of success factors related to the supervisors' category and their RII values. From this category, supervisors' competence was ranked 1st with an RII value of 0.783. In 2nd place, proper monitoring and feedback systems were ranked with an RII value of 0.763. However, the favorable working condition was ranked in 3rd place with an RII value of 0.706.

Consequently, it is clear that, compared to other factors, supervisory competency and control or monitoring were viewed as the most important factors influencing the performance of construction projects.

Table 4.18 RII Value and Rank of Success Factors Related With Supervisors

Factors related with supervisors	RII value	Rank
Favorable working conditions	0.706	3
Supervisors competence	0.783	1
Proper monitoring and feedback systems	0.763	2

Figure 4.19 below shows the ranking of success factors related to the supervisor's category depending on the mean scores of each success factor.

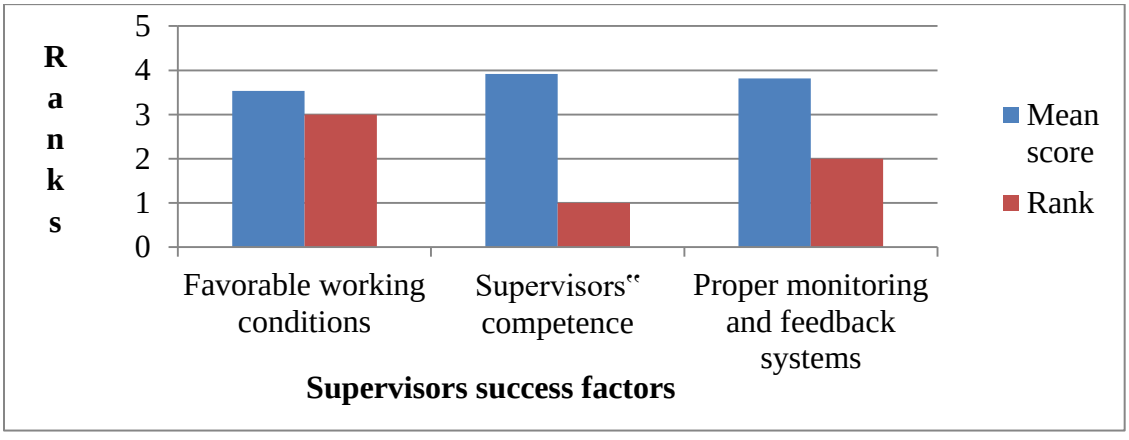

Figure 4.19 Ranks of Success Factors Related With Supervisors

4.3.4. Factors Related With Project Teams

These factors are related to the activities or abilities that the personnel's in the project have and to what extent they are performing on the existing construction project.

Table 4.19 below shows the ranks of success factors related to the project team's category and their RII values. From this category, effective communication was ranked 1st with an RII value of 0.779. The 2nd, 3rd, and 4th place were held by commitment, a clear understanding of roles, the culture of time management and motivation to end construction projects on time with an RII value of 0.763, 0.759, and 0.751, respectively. The other success factors' rank was clearly described in the table below, depending on their RII values.

As a result, it is possible to conclude that the lack of good communication commitment and project time management are the factors most affecting the performance of construction projects when compared to other factors.

Table 4.19 RII Value and Rank of Success Factors Related With Project Teams

Factors related with project teams	RII value	Rank
Commitment, a clear understanding of roles	0.763	2
Motivation to end up construction projects on time	0.751	4
Assignment of project team members on the right position	0.746	5
Knowledge of project team leaders when they are due to give feedbacks on the performance of the project	0.722	8
Availability of all the necessary facilities and work environment	0.693	9
Qualifications of project team members	0.746	5
Existence of effective communication	0.779	1
The culture of time management	0.759	3
Proper team coordination and encouragement of project activities	0.730	7

Figure 4.20 below shows the ranking of success factors related to the project team's category depending on the mean scores of each success factor.

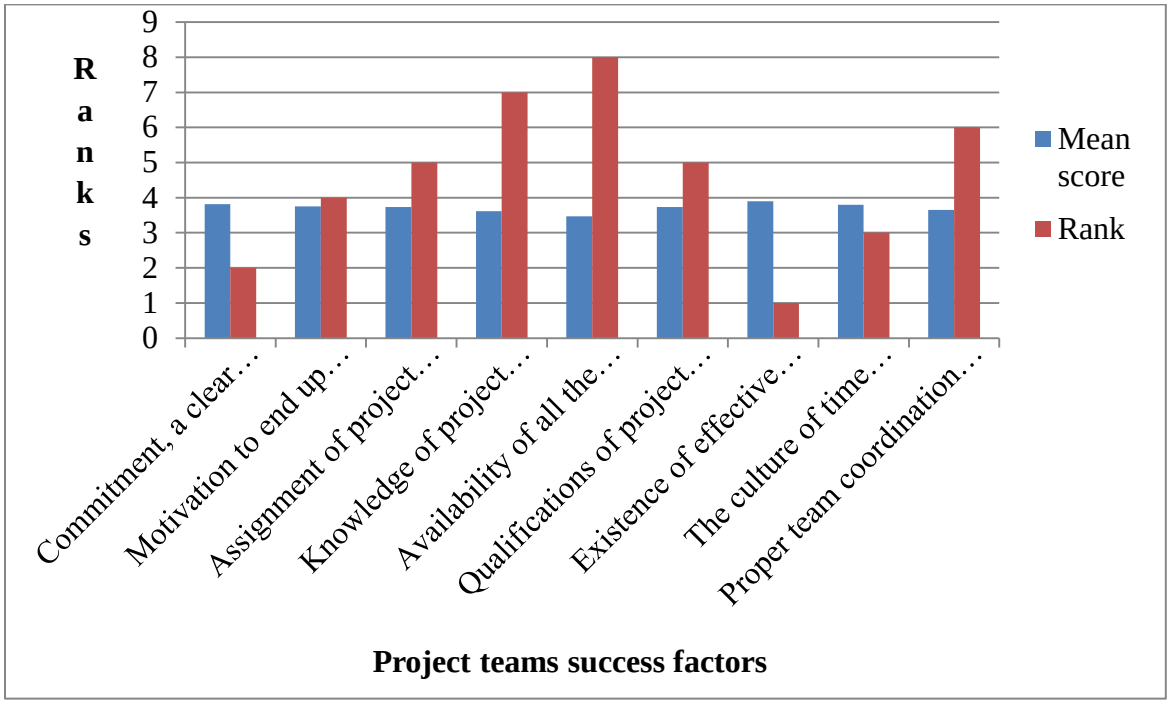

Figure 4.20 Ranks of Success Factors Related With Project Teams

4.3.5. Summary on Key Success Factors

This section mainly focuses on the second objective of the study, which was to look out for those success factors on construction leadership that can affect the performance of construction projects.

Table 4.20 summarizes the key success factors that can affect the performance of construction projects based on the respondents' opinions and gives a rank based on their RII values. So, from those key success factors, project managers related factors were ranked 1st with an average RII value of 0.772, and in 2nd place factors related with supervisors was ranked with an average RII value of 0.751.whereas in 3rd and 4th place Project management related factors and factors related with project teams were ranked with average values of 0.746 and 0.743 respectively.

From the entire twenty nine (29) success factors listed, leadership skills and technical capability of Project managers (PM), and goal clarity of projects were the factors that mostly affect the performance of building projects compared with other factors.

Table 4.20 Summary on Key Success Factors on Construction Leadership That can Affect the Performance of Construction Projects with Their Average RII Values and Ranks

Key success factors	Average RII value	Rank
Project management related factors	0.746	3
Project managers related factors	0.772	1
Factors related with supervisors	0.751	2
Factors related with project teams	0.743	4

Table 4.21 below shows the results from the questionnaires regarding key success factors on construction leadership that can affect the performance of construction projects with a higher internal consistency with the Cronbach's Alpha of 0.948, which is excellent. (i.e., the items under this category have relatively higher internal consistency).

Table 4.21 Reliability Statistics of Key Success Factors on Construction Leadership That Can Affect the Performance of Construction Projects

Cronbach's Alpha	Internal consistency	N of Items
0.948	Excellent	29

4.4. Effects of Poor Construction Leadership Practice

The practices of poor construction leadership in construction projects affect the overall performance of the construction. This section mainly focuses on the third objective of the study, which was to assess the effects of poor construction leadership on the performance of the building construction projects and draw possible recommendations to improve the existing practice.

Table 4.22 below shows the effects of poor construction leadership on the performance of the building construction projects based on the respondents' opinions. It gives a rank based on their RII values. From those effects, decreased productivity through increasing production cost and extension of time was ranked 1st with an RII value of 0.861 in 2nd place, project managers with the low level of leadership skills and failure to improve many health and safety initiatives in the sector were ranked jointly with RII value of 0.840. The other effects ranks are clearly described in the table below, depending on their RII values.

According to the findings, a decrease in productivity, a lower level of skilled project managers to execute projects, and a failure to improve health and safety, among other things, are the consequences of a lack of proper leadership practices throughout the projects, which will hinder the performance of construction projects.

Table 4.22 RII Value and Rank of Effects of Poor Construction Leadership Practice on the Performance of the Building Constructions Projects

Effects of poor construction leadership practice on the performance of the building constructions projects	**RII value**	**Rank**
Do you feel that successful project managers have high level leadership skills	0.840	2
Varying in construction management leadership practice can make a difference on the performance	0.820	4
Good leadership and supervision in construction projects increases the productivity through decreasing production cost, reducing time required	0.861	1
Lack of leadership in the construction support for the failure of many health and safety improvement initiatives in the sector	0.840	2
Did the project managers on your company knows how to delegate and when to delegate	0.775	7
Construction conflicts are usually managed by managers in your organization	0.726	10

Many construction projects have formal leadership strategy including your company	0.697	12
Effective management control of construction projects is an outcome of technological capacity and research development. I believe there is no sufficient study on construction management leadership in Ethiopia.	0.738	9
Construction leadership plays a great role on effective implementation of sustainable practices in construction organizations.	0.791	6
Do you feel extremely satisfied with your job when working as a construction project manager/office engineer/supervisor/site engineer?	0.742	8
Do you receive any construction leadership training?	0.710	11
Do you believe that adequate construction leadership practice is present?	0.681	13
Did your company conduct a quality training session for your employees?	0.665	14
Do you think the current poor condition of construction management practice can be enhanced if competent engineers with sufficient leadership skill get into the sector?	0.800	5

Figure 4.21 below shows the effects of poor construction leadership on the performance of the building construction projects depending on their mean scores of each effect. As the lower the height of the graph, the higher with a mean score value and vice versa so, the effects with higher mean score values are ranked 1st, and the others ranked in descending order depending on their mean score values.

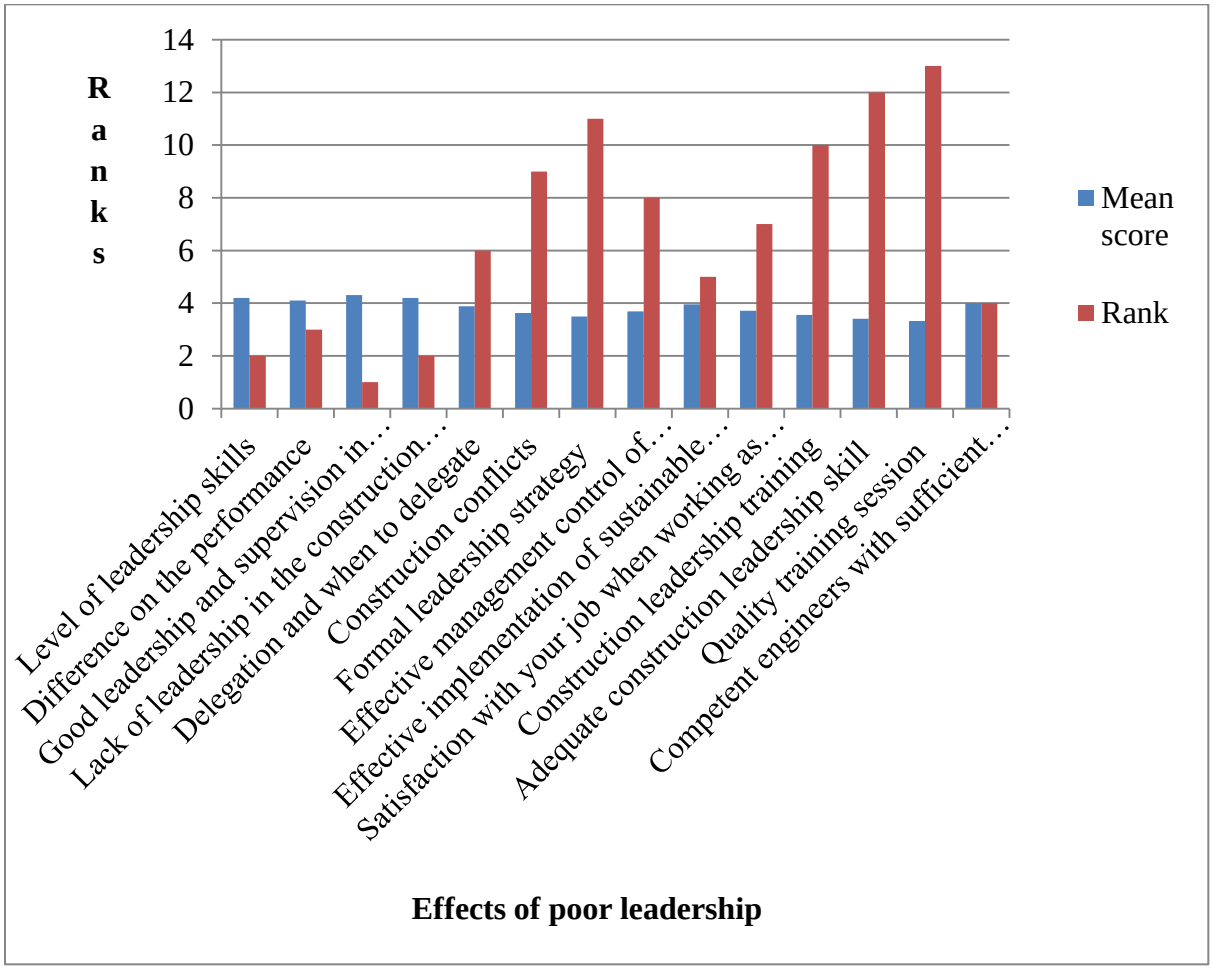

Figure 4.21 Ranks of Effects of Poor Construction Leadership Practice on the Performance of the Building Constructions Projects

Table 4.23 below shows the results from the questionnaires regarding effects of poor construction leadership practice on the performance of the building constructions project, which has acceptable internal consistency with the Cronbach's Alpha of 0.750 (i.e., the items under this category have relatively acceptable internal consistency)

Table 4.23 Reliability Statistics of Effects of Poor Construction Leadership Practice on the Performance of the Building Constructions Projects

Cronbach's Alpha	Internal consistency	N of Items
0.750	Acceptable	15

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Nowadays, the building sector provides a sizable contribution to a country's socio-economic growth. Thus, an effective management structure leadership is required to maximize its potential. Numerous studies on leadership and its effect on the success of construction projects have been done globally. We are aware that the construction sector's performance in our nation has been questioned, which is why this type of research is necessary to analyze construction leadership practices and their impact on the performance of construction projects in Hawassa city. This research primarily focuses on three specific objectives: to assess current construction leadership practices and their effectiveness in building construction projects; to assess the critical success factors for construction leadership that can affect the performance of construction projects; and to assess the effects of ineffective construction leadership on the performance of building construction projects and possible recommendations to improve current practices. The following conclusions were drawn from the results of the study based on the objectives of the study and findings from the research time:

Concerning construction leadership practice and effectiveness in building construction projects, this study identified a total of eighty (80) skills or practices from the literature and classified them into twelve (12) categories, which were then ranked according to their significance based on their average RII values: time management, results from monitoring, problem-solving and informed judgment, conflict resolution, integrity, communication, and efficacy. As a result of the findings, the majority of leaders possess educational credentials; they lack the necessary planning ability, decision-making ability, ethics, and sense of responsibility for project managers, particularly concerning health and safety issues, as well as construction leadership skills. That is why most construction projects become fragile on preventing, assuring safety in construction sites. It is because lack of strong management and visionary leader in construction projects.

Concerning success factors on construction leadership that can affect the performance of construction projects, a total of twenty-nine (29) factors were identified in this study which was classified under four main categories, namely; Project management-related factors, project managers related factors, factors related to supervisors and factors related with project teams. Identifying those success factors was based on a careful review of literature and suggestions from local experts in building construction. Based on the result of the research, the key factors which contributed to construction projects success were project manager's related factors, factors related to supervisors, project management related factors, and factors related to project teams, and those success factors were ranked according to their average RII values from 1st to 4th respectively.

Concerning the effects of poor construction leadership on the performance of the building constructions projects, a total of fifteen (15) items were listed depending on their effects due to poor leadership practices on the performance of building construction projects. From those effects to the performance of building projects decrease in productivity due to increasing production cost and extending time, lower level of skilled project managers to execute projects, failure to improve health and safety, and others like lower performance in the projects were the effects that come due to poor leadership practices throughout the building construction projects at Hawassa city. The findings show that the critical effects of lack of effective leaders are seen in the overall performance of construction projects.

In general, it was to conclude that from the research findings to make the construction leadership effective those practices that are categorized under twelve major groups should be practiced in accordance with their necessity and also those success factors should be handled carefully inorder to gain a better performance and to avoid those effects that would come due to those factors throughout the entire projects.

5.2. Recommendations

Based on the investigation result, the following basic recommendations are made and forwarded to different parties or superintendents to enhance the current application of leadership in construction projects.

- As the study identified, the time management, monitoring for results & Problem solving, and informed judgment in building construction projects was good compared with the others, so it is needed to increase and go on efficiently on these subjects to make it better.
- Planning is a very basic process in projects. Fail to plan means fail to everything. It is noticed that projects stop or are delayed because of problems which didn't forecast during planning. The study also identifies lower planning skills of managers. Thus, it is better to have a realistic schedule that can look ahead.
- Project managers must implement a performance management system at the individual and project level to ensure a dependable planning and controlling system for their work and spend time on-site to improve project management efficiency.
- In order to attain the objectives of the research, a periodic training session regarding leadership and other skills should be planned and applied.
- It is recommended that skilled and competent professionals should join the industry. Because not only join should assign in the right position. People's skills and competencies matter a lot. Therefore, construction companies should give training by inviting seniors who know construction leadership well.
- Construction companies have to give serious attention to leadership development. Like foreign countries, construction leadership networks have to have emerged because it helps gather professionals together and exchange new techniques, methods, and technology. Then the industries become competent.
- Higher educational institutions can play a great role. It is better if they include courses like leadership in their curriculums so that emerging engineers will have the know-how to lead construction projects effectively.
- Government should give capacity building for professionals and firms in the construction sector to develop the professionals' performance. In addition, the government has to initiate intellectuals to research construction leadership and increase the performance of building constructions.
- As indicated in Table 2.3 in the literature part, the scope of leadership studies in construction projects so, it needs to do studies with broader scope here in our

country in order to make our construction industry better. Researchers can use this research to guide and work on other scopes regarding construction leadership that are not considered in this research work.

Generally, all parties in a construction project must contribute their rightful parts towards establishing better leadership practices on projects and gaining a better performance throughout the entire activities starting from the beginning to the end.

REFERENCES

(CSA)., C. S. (2011). Report on Contract Construction Survey of 2008/2009. Available from <http://www.csa.gov.et/index.php?option=com rubber doc & view...id...> [Accessed 4 March 2017].

Abdul Aziz HUSSIN, A. O. (November 2009). ROLES OF PROFESSIONALS IN CONSTRUCTION INDUSTRY.

Aga, D. A. (2016). Transactional Leadership And Project Success: The Moderating Role Of Goal Clarity. Procedia Computer Science 100 (2016) 517 – 525.

Aibinu and Jagboro. (2002). The effects of construction delays on project delivery in Nigerian construction industry, Faculty of Environmental Design and Management, Department of Quantity Surveying, Obafemi Awolowo University, Ile-Ife, Nigeria. International Journal of Project Mgt.

Alem T. (2015). Construction In Ethiopia.

Al-Moghany, S. S. (2006). Managing and Minimizing Construction Waste in Gaza Strip. A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Construction Management The Islamic University of Gaza - Palestine .

Anantatmula, V. S. (2010). Project Manager Leadership Role In Improving Project Performance. Engineering Management Journal.

Belay, M. D., Tekeste, E. A., & Ambo, S. A. (2017). Investigation Of Major Success Factors On Building Construction Projects Management System In Addis Ababa, Ethiopia.

Benator, B., & Thumann, A. (2003). Project Management And Leadership Skills For Engineering And Construction Projects. United States Of America: Fairmont press.

Bhangale, P. P., & Devalkar, R. (2013). Study The Importance Of Leadership In Construction Projects.

Dahal, R. K., & Manoj, K. (2016). Leadership Management Among Construction Professional In The Context Of Nepal. Journal Of Entrepreneurship And Organization Management, 9.

Dunn, D. S. (2012). The Practical Researcher: A Student Guide to Conducting Psychological Research (3rd editionn). Wiley-Blackwell.

Easterby-Smith, M., Thorpe, R., & Jackson, P. (2012). Management and Business Research (4th edition, Vol. 3). Los Angeles: Sage Publication, London.

EEA. (2006/07). The current state of the construction industry. Report on the Ethiopian economy, Volume VI .

Faridi , S. A., & El-Sayegh,. (2006). Significant Factors Causing Delay In The Uae Construction Industry. Construction Management And Economics.

Getachew, Y. (2015). Causes Of Failure Of Projects Financed By Development Bank Of Ethiopia'the Case Of Corporate Credit Process '. Addis Ababa.

Gliem, J.A. and R.R. Gliem. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales.Midwest Research-to Practice Conference in Adult, Continuing, and Community ….

Habenom Gebru zeray. (2017). Research in the Ethiopian construction industry: a review of past studies and future need assessments MSc thesis. Institute of Technology, Addis Ababa University, Addis Ababa, Ethiopia. pp. 5-6.

Haughey D. (2011). Understanding the project management triple constraint. http//www.project smart.co.uk (Accessed on Jan. 02, 2019).

Ismail , A., & Nashwan , A.-E. (2018). Significant Leadership Qualities For Saudi .

Jackson, B. J. (2010). In Construction Management jump start (p. 23). Indianapolis, Indiana: Wiley Publishing, Inc.

Kifle, W. (2013). Factors Affecting Time Performance Of Local Road Contractors On Federal Road Construction Projects.

Lemma, T. (2014). The Role Of Project Planning On Project Performance In Ethiopia.

Liphadzi, M., Aigbavboa, C., & Thwala, W. (2015). Relationship Between Leadership Styles And Project Success In The . Creative Construction Conference 2015, (P. 6). Poland.

Metri B.A. (2005). 'TQM Critical Success Factors for Construction Firms',Management, Vol.10. Available from: <http:// hrcak.srce.hr/file/29889>[Accessed 21march 2017].

Mohamed, E.-M. (2014). Leadership Importance In Construction Productivity. Global Advanced Research Journals, 12.

Mohd, F. (2006). Self Evaluation System For Construction Project Manager"s.

Muir, B. (2005). 'Challenges Facing Today's Construction Manager'. Delaware:University of Delaware.Available from:<www.ce.udel.edu/courses/.../Challenges%20Facing%20Today's%20CM.pdf > [Accessed 8 April 2017].

Nasaruddin, N. A., & Rahman, I. A. (2016). Leadership Quality For Malaysia Construction Leader To Steer A Success Construction Project.

Natalie , S. C., & Mbohwa, C. (2015). Study On The Leadership Behaviour, Safety Leadership And Safety Performance In The Construction Industry In South Africa.

Nedal, J. G. (2012). The Construction Manager Leading Characteristics For The Success Of. Gaza, Palestine.

Nedal, J. G. (2012). The Construction Manager Leading Characteristics For The Success Of. Gaza, Palestine.

Ofori, G., & Toor, S. R. (2012). Leadership And Construction Industry Development In Developing . Journal Of Construction In Developing Countries, 21.

Olanrewaju, A., Tan, Y. S., & Kwan, L. F. (2017). Roles Of Communication On Performance Of The Construction Sector.

Onwuegbuzie, A. J., & Johnson, R. B. (2004). Mixed methods research: A research paradigm whose time has come. Educational Researcher (Vol. 33). American Educational Research Association.

Opoku, A. (2011). Leadership In Construction Organizations And The Promotions Of Sustainable Practices.

Owusu, T. (1999). Factors Affecting The Performance Of Ghanaian Owned Construction.

Richard, F. (2015). Research Methods For Construction. United Kingdom.

Semere, T. A. (2006). Assessment of Delays in Building Construction Projects in Ethiopia. B.Sc. Degree Thesis paper in Construction Technology & Management,Addis Ababa University, Faculty of Technology (South), Department of Construction technology & management.

Shibani, A. (2016). The Impact Of Managers' Leadership Skills On Construction Project Performance In Dubai.

Stephanie, E. (2003). Slovin's Formula Sampling Techniques. Houghton-Mifflin, New York, USA.

Sunindijc, R. Y. (2015). Project Managers Skills For Improving Projects Performance.

Tagesse, B. (2017). Assessment Of Construction Performance Challenges In Selected University Building Construction Projects.

target jobs.co.uk. (n.d.). Retrieved 02 2021, from https://target jobs.co.uk

Westland J. (2018). Project Management: Time, Scope and Cost.http//www.projectmanager.com (Accessed on Nov.23, 2018).

(n.d.). Www.Managementstudyguide.Com.

Xiong, R. (2008). Leadership In Project Management.

Yada, A. L & Yadeta, F. T. (2016). Factors Affecting The Performance Of Construction project under. Abc research alert, Vol14, No 2.

Yimam, A. H. (2011). Project Management maturity in the construction industry of developing country (the case of Ethiopian contractors). Thesis submitted to the Faculty of the Graduate School of the University of Maryland,in partial fulfiliment for Msc.

Yosia, R. (2015). Project Managers Skill To Improve Project Performance.

Zhang, Y., Zheng, J., & Darko, A. . (2018). How Does Transformational Leadership Promote Innovation In Construction? The Mediating Role Of Innovation Climate And The Multilevel Moderation Role Of Project Requirements.

APPENDIXES

Appendix I: Questionnaire survey

Jimma University

Jimma Institute of Technology

School of Graduate Studies

Faculty of Civil and Environmental Engineering

M.Sc. thesis on Construction Engineering and Management

Dear Respondent,

I would like to present my appreciation and thanks to you for taking part of your time to complete this questionnaire. I am a postgraduate student in stream of construction engineering and management in Jimma University, Institute of Technology, Faculty of Civil and Environmental Engineering. I am conducting a research with the topic entitled ***"Investigating of Construction Leadership Effectiveness on the Performance of Building Construction Projects: A Case of Hawassa City"*** for the degree of Master of Science in Construction Engineering and Management at Jimma university.

Below are list of questions for your response. As with all Knowledge Networks surveys, your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your responses will be used for statistical purposes only.

If you have questions related to the study please do not hesitate to contact me through my Tel. +251926328340, +251919625355 or through my email address at: seidjemal507@gmail.com. I hope that the result of this questionnaire will be supportive and fruitful.

I thank you for your collaboration!

SECTION I: RESPONDENT PROFILE

1. Name (optional):_____
2. In which organization are you currently working for?

   - Client ☐
   - Contractor ☐
   - Consultant ☐
   - Other, please specify

     _____

     _____

3. What is your current position?
   - Project manager ☐
   - Site Engineer ☐
   - Office Engineer ☐
   - Resident Engineer ☐
   - Forman ☐
   - Site Supervisor ☐
   - Other, please specify

     _____

     _____

4. Your job experience in construction projects?

   ☐ <5 years ☐ 5-10 years ☐ 15-25years ☐ >25years

5. Educational background?

   ☐ BSc ☐ MSc ☐ Advance diploma

   - Other, please specify

     _____

     _____

6. Number of executed construction projects you participated in?

   - 2 Projects or less ☐
   - 2-4 Projects ☐
   - 4-6 Projects ☐
   - More than 6 projects ☐

SECTION II: Items designed to explain the construction leadership skills or practices to lead construction projects effectively.

The given below are skills or practices to lead construction projects effectively. Please indicate the significance of each skill by ticking inside of the appropriate boxes.

1 = extremely significant [100%] **2 = very significant [75%]**

3 = moderately significant [50%] **4 = slightly significant [25%]**

5 = not significant [0%]

S/N	Skills to lead construction projects	1	2	3	4	5
Planning skill						
1.	Your company give more value on the preparation of action plan to reach project's objective					
2.	The prepared plan anticipate potential resource conflicts and indicates how these conflicts will be managed					
3.	Project managers notify the objectives of client, make reasonable project plan and have the ability of prediction					
4.	Professionals have good ability to proportionate the budget to the overall complexity of the project					
5.	In your project ,project deliverables are clearly identified on when they are due,					
6.	There is any excellence on making detailed schedule which list key phases, tasks and milestones					
7.	Project managers are good at preparing meetings to discuss on the plan with project team members					
8.	project managers good at measuring of plan through identification of key causes, restrictions, and downstream consequences					
9.	Team members give priority to the project goal than fighting for personal interest					
10.	Managers give guidance to design teams in optimizing the performance of buildings and plants over their life.					

Communication		**1**	**2**	**3**	**4**	**5**
11.	Project manager is good at initiating communication with project team members about their expectations ,principles and sates standards for the project					
12.	Project leaders are good at communicating their visions clearly and set a project goals in a way that everyone can grasp					
13.	There is good ability by managers to listen, persuades, and understands what other's thinking					
14.	Meetings usually prepared with team members to explain very clearly the standards for the project.					
15.	There is periodic schedule review meetings to avoid late deliverables					
16.	There is effective communication and close coordination between stakeholders to ensure complete agreement and commitment					
Staffing and team building						
17.	The leading/managing position of projects possess by experienced engineers and there is no doubt on the qualifications of project team members					
18.	Your projects has sufficient human resources allocated for quality management in your project					
19.	Your team members have complete trust on each other's skills and abilities. And there are trainings that ensures members know how to do their jobs well and safe					
20.	Your company's learning and knowledge sharing culture is exemplary					
21.	There is suitable working environment that welcomes everyone					
22.	Project team members are motivated to execute the project					
Time management						
23.	Project leader's good at developing a realistic schedule and identify activities in a work breakdown structure (WBS) format					
24.	project's time is not wasted by using for own business					
25.	There is clear identification and allocation of available resources to the project tasks					

Effective technical management		**1**	**2**	**3**	**4**	**5**
26.	Project manager takes the overall project responsibility and accountability, in managing the technical performance of the project,					
27.	project team members who participate in your project hold accountable for their technical performance and they supported and coached to help them meet their commitments in the future					
28.	Appropriate guidance sufficiently provided to design team so they know the standards upon which they should base their design.					
29.	There is a trend of working with experienced engineers, construction managers and code officials to resolve code conflicts in your project.					
30.	There are periodic and as-needed meetings there with the project technical team effectively exercised to assess how the project is proceeding technically, give participants an opportunity to voice any concerns					
31.	Project team members encouraged and motivated to counsel on difficult technical issues					
32.	The management of financial part of your project is effective and sound control system used					
33.	Project managers use their position to determine if the labor costs charged to the project are reasonable compared to value received					
34.	Your project financial reports carefully checked with the concern of reducing the incidences of invalid charges appearing					
35.	Your project control system checked regularly to ensure the subcontractors invoices that approved for payment are accurately reflected in the system					
36.	There is fairness and respect on treating subcontractors					
37.	Field leaders are good to ensure that all efforts are cost effective and a spirit of financial stewardship is part of the work team's culture					
38.	Project managers good at practicing quality management principles					
Problem Solving and Informed Judgment						
39.	Construction companies are good on solving great majority of problems without changing a due date, an end budget or quality					

	standards.					
40.	When failures happens ,it's reviewed thoroughly and solved using practical solution					
41.	Construction projects are good at serious supervision					
42.	Project managers are good at problem definition, and decision making for problems					
43.	There is effectiveness on using reliable data and information from experience of others and own experience to make decisions					
Integrity						
44.	The project manager and team members show up on time					
45.	Members in a project give focus on their performance					
46.	Team members in the project taking their responsibility for setting ethical standards					
47.	Project leaders shows their commitment to fight corruption					
Decision making						
48.	Opinions forms and decisions made based on information and on the identification of available contractual obligations, standards and codes.					
49.	Decisions regarding claim and payment issues made in fast way					
50.	Complete and accurate data tried to be obtained before taking action					
51.	There is a trend of examining logic and biases also Check with others					
52.	Decision makers think thoroughly about the consequences of their decisions					
Conflict resolution						
53.	There is excellent communication in your project that could resolve conflict					
54.	The atmosphere of understanding and cooperation exist in your project					
55.	Project managers are good at actively listening to all points of view and then clarify by restating the other option					
56.	Project managers are good at presenting their position and justify in neutral language					

57.	Project managers are flexible and willing to collaborate. also aware of the impact of emotions					
58.	Project leaders good at recognize when negotiation is taking place and the styles to create a win-win situation that does not impact the project.					
59.	Project managers have the competency to negotiate to resolve conflicts					
60.	Project managers attempts to identify the real issues underlying the conflict					
Monitoring for results						
61.	Project manager is effective in evaluating performance					
62.	Project managers and supervisors have a habit of getting out of their office and actively observe work progress and collects performance information.					
63.	Project leaders are good at analyzing the information provided by own staff, customer, business partners and other feedback as meaningful and useful. Acts on that information to improve performance					
64.	Companies‟ way of controlling the execution of the projects is systematic based on planning.					
65.	Project activities coordinated effectively					
66.	The quality assessment system in the organization is sound					
67.	Your project undertake safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations					
Sense of Responsibility						
68.	Construction projects including yours has good management which committed on setting and implementing safety and health program					
69.	Most contractors are good on ensuring the safety and well- being of its personnel in all prevention measures designed against fire, accident or any other hazards					
70.	Professional who involved in this project takes responsibility for own					

	and team's performance, including failures or problems.					
71.	Your team members are active to take responsibility responsible for their actions in the project					
72.	In many construction projects, project managers and the top management take actions to support the member's responsibilities toward his/ her family affairs.					
73.	If failure happens, blaming on others immediately to make decisions is very common					
Ethics						
74.	Professionals consider ethics as moral reasoning behind making of decision					
75.	The leader does not let standards be violated with impunity					
76.	There are specific codes of ethics which used to governing the conduct of Individuals					
77.	The implementation of code of ethics for professionals is satisfactory					
78.	There is good culture at dealing by morality depend on a specific system of norms through their day practice					
79.	Many construction firms choose to bid the job as is even though the drawings, specification are poor or wrong					
80.	Compromising quality in order to increase profit is noticeable in our construction projects which handled by local contractor and consultant					

SECTION III: Success factors that will contribute to the better performance of construction projects.

The given below are Success factors that will contribute to the better performance of construction projects. Please indicate the significance of each success factors by ticking the appropriate boxes.

1 = extremely significant [100%] **2 = very significant [75%]**

3 = moderately significant [50%] **4 = slightly significant [25%]**

5 = not significant [0%]

S/N	Success factors	1	2	3	4	5
Project management related factors						
1.	Proper planning or scheduling ability					
2.	Project goal clarity					
3.	Appropriate organizational resources					
4.	Control/monitoring mechanism					
5.	Risk identification effectiveness					
6.	Total quality management implementations					
7.	Safety program effectiveness					
8.	Comprehensive contract documentation					
9.	Top management support					
Project managers related factors						
10.	Project manager (PM) leadership skills and technical capability					
11.	PM`s commitment to meet quality, cost &time					
12.	PM`s early & continued involvement in project					
13.	Coordinating ability and rapport of project manager with owner/owner representatives					
14.	Decision making ability					
15.	Motivating skills of project manager					
16.	Planning, organizing and technical skill of project team leaders					
17.	Team leaders knowledge on how they can motivate team members					
Factors related with supervisors						
18.	Favorable working conditions					
19.	Supervisors‟ competence					
20.	Proper monitoring and feedback systems					
Factors related with project teams						
21.	Commitment, a clear understanding of roles					
22.	Motivation to end up construction projects on time					
23.	Assignment of project team members on the right position					
24.	Knowledge of project team leaders when they are due to give feedbacks on the performance of the project					
25.	Availability of all the necessary facilities and work environment					

26.	Qualifications of project team members					
27.	Existence of effective communication					
28.	The culture of time management					
29.	Proper team coordination and encouragement of project activities					

SECTION IV: level of agreement or disagreement on different construction project leadership practices, its effect and recommendations.

The given below are levels of agreement or disagreement on different construction project leadership practices, its effect and recommendations. Please indicate the significance on agreement or disagreement on different construction project leadership practices, its effect and recommendations.

1 = extremely significant [100%] **2 = very significant [75%]**

3 = moderately significant [50%] **4 = slightly significant [25%]**

5 = not significant [0%]

S/N	Items	1	2	3	4	5
1.	Do you feel that successful project managers have high level leadership skills					
2.	Varying in construction management leadership practice can make a difference on the performance					
3.	Good leadership and supervision in construction projects increases the productivity through decreasing production cost, reducing time required					
4.	Lack of leadership in the construction support for the failure of many health and safety improvement initiatives in the sector					
5.	Did the project managers on your company knows how to delegate and when to delegate					
6.	Construction conflicts are usually managed by managers in your organization					
7.	Many construction projects have formal leadership strategy including your company					

8.	Effective management control of construction projects is an outcome of technological capacity and research development. I believe there is no sufficient study on construction management leadership in Ethiopia.					
9.	Construction leadership play a great role on effective implementation of sustainable practices in construction organizations					
10.	Do you feel extremely satisfied with your job when working as a construction project manager/office engineer/supervisor/site engineer?					
11.	Do you receive any construction leadership training?					
12.	Do you believe that adequate construction leadership skill is present?					
13.	Did your company conduct a quality training session for your employees?					
14.	Do you think the current poor condition of construction management practice can be enhanced if competent engineers with sufficient leadership skill get into the sector?					

Thank you!!!