

**ADDIS ABABA UNIVERSITY SCHOOL OF
COMMERCE GRADUATE STUDIES
PROJECT MANAGEMENT**



**ASSESSMENT ON CRITICAL SUCCESS FACTORS OF
CONSTRUCTION PROJECTS**

**(A CASE OF ETHIOPIAN SHIPPING AND LOGISTICS SERVICES
ENTERPRISE CONSTRUCTION PROJECTS)**

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Management**

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Statement of Declaration

I, Ayinetaw Alem, hereby declare that the project work entitled – “Assessment on Critical Success Factors of Construction Projects - a case of Ethiopian Shipping and Logistics Services Enterprise Construction Projects” represent my own work and findings to the partial fulfillment of the requirements for Masters of Arts Degree in Project Management, except where indicated and that all references, to the best of my knowledge are accurately reported. This paper has not been submitted for any diploma, degree or master’s program in any institution.

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Date

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Statement of Certification

This is to certify that Ayinetaw Alem has carried out the project work entitled – “Assessment on Critical Success Factors of Construction Projects - a case of Ethiopian Shipping and Logistics Services Enterprise Construction Projects” to the partial fulfillment of the requirements for Masters of Art Degree in Project Management. The paper has been done by him and we certify that it has not been submitted to any institution before.

Wubshet Bekalu (Ph D)

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Acronyms

ESLSE Ethiopian Shipping and Logistics Service Enterprise

PM Project Manager

PSCs Success criteria

PP Project performance

PSFs Project success factors

SPSS Statistical package for social sciences

Abstract

This study presents an assessment of the critical success factors in ESLSE construction projects. To achieve this aim, questionnaires were administered to all contractors, project managers, consultants, engineers in different levels, supervisors, foremen, and various technicians who work on ESLSE seven active construction projects in Addis Ababa and Modjo city. The critical success factors are summarized in components, that is, comfort, competence, communication and commitment (COMs). These components frame the four COMs model which forms a basis for evaluation of the questionnaires. An in-depth analysis review of the literature on the critical success factors in the construction projects has affirmed the four COMs model. The interpretation of this quantitative study was conducted with the use of descriptive statistics presented in a tabular format. The findings revealed that more than 61% of the respondents agree and strongly agree that the critical success factors are found practical in ESLSE. There was difference in their application on the four COMs of critical success factors in ESLSE, given the demographic differences between them. The critical success factors identified in this study have provided a way forward for project managers, contractors and other executers in ESLSE construction projects and others. Hence, the results presented in this study can be used as a guideline for successful execution of construction projects in ESLSE. ESLSE can modify the approach it should focus on and adjust trainings towards the employees. More over ESLSE should adjust the requirements the contractors should fulfill.

Key words: Construction, Critical Success Factors, Project Success, construction project success

CHAPTER ONE

Introduction

1.1 Background of the Study

This chapter discusses the background of this study in detail by building a strong case for the research. Furthermore, relevant elements of the study, namely: the research problem, objectives, significance, limitations of the study and a brief overview of subsequent chapters are discussed in this chapter.

Project success has taken the construction industry to the point where maintaining existing clients has become a battle, let alone attracting new clients (Toor and Ogunlana, 2005). An assumption is made that if the work is finished on time, within the agreed budget and set quality (golden triangle), then the project is deemed successful. Available evidence suggests that this is far from the truth. Hence, the construction industry needs to pay special attention to critical success factors, besides the golden triangle, if it is to challenge the global challenges and stay in the market front line. Critical success factors should be carefully identified with assistance from construction consultants/project managers, engineers, contractors and other stakeholders.

Zwikael (2009: 372-387) asserts construction work is project-oriented. This requires the use of project management tools and techniques as opposed to conventional management techniques. Proper usage of project management tools within the project life cycle ensures smooth execution of activities. The project life cycle is the framework upon which the project is carried out.

The unique nature of projects shows that critical success factors identified in one industry or project cannot be directly transferred to other industries or projects. The similarities found in the construction industry in developing countries such as Ethiopia makes sharing of knowledge easy.

1.2 Background of the organization

As an enterprise managed by government, ESLSE has gained its current status by merging three independent companies; Ethiopian shipping lines S.C, maritime and transit services Enterprise and dry port Enterprise in 2011 based on the council of Ministries regulation number 255/2004.

The enterprise has a responsibility of rendering sea transport and logistics service to importers and exporters in a more effective and efficient way by reducing transit time, cost and handoffs. It provides coastal and international marine transport services to and from Djibouti port through the Ports of gulf of Indian sub-continent, china, Korea, Japan, Singapore, South Africa, and Indonesia. The shipping sector provides interrupted sea transport service in and around the above ports with own ships as well as via slot chartering of major global carriers. In the year 2016/17 it has moved a total of 4,538,722 tons of goods (ESLSE magazine, 2017).

It has three sectors each with its own different services. These are the shipping sector, the freight forwarding sector and port and terminal sector. It owns 11 ships of which 9 are dry cargo ships and two are oil tankers. It has a total capacity of transporting 250,987 dry tones and 84,300 metric tons of oil at once. The enterprise is rendering service as one of the main sectors by transporting above 94 % import goods to the country on its own and on chartered vessels.

As an enterprise with a vision in mind to become preferred and renowned African logistics company by 2020, it has planned and worked on many projects. The enterprise projects multipurpose building projects, Modjo, Dire Dawa, Mekelle, Semera and Kality terminal handling projects are few among many. It has its own project management office but many projects are handed to contractor organizations, as its main duty is overseeing the works of contractors. It will invite bidders and will transfer the work to the winner.

1.3 Statement of the problem

Due to shortage of studies on assessment of critical success factors on construction industry in Ethiopia as needed, I have described articles and related papers with the issue not fully.

De Silva, N., Rajakaruna, R. W. D. W. C. A. B., & Bandara, K. A. T. N. (2008) identified 46 challenges/issues faced by the construction industry of Sri Lanka and grouped those under 10 major categories. However, they have used a relatively small sample. On the other hand, consultants, project managers and other staff who have real experience in day-to-day project operation have not been included. When stakeholders only from the top are involved, the outcomes are unable to generalize it.

This paper puts separately the two critical success factors as controllable and less/no controllable by the contractor. Individual companies' management consider the controllable are most decisive and critical for contracting companies as full accountability lies on them for it. These factors are factors are directly related not only to the success of a particular project but for the organizational success of the contracting company in many ways. Moreover, such factors are more likely to be contributing to the sources of sustainable business in the construction field simply because the entire organization would be blacklisted and wiped out from the business unless these factors are managed properly.

In line with this stream of thoughts, factors which the contractor has control are likely to be the sources of competitive advantage over competitors in construction industry and those once developed could be the enablers to capture the opportunities and strengths to face threats posed by external factors.

Many studies conducted on critical success factors are very broad and include both types of factors: e.g. Nguyen & Chileshe (2013), Kazaz, A., Ulubeyli, S., & Tuncbilekli, N. A. (2012), De Silva et al. (2008), Yong & Mustaffa (2012), Garbharran, H., Govender, J., & Msani, T. (2012), and Gunathilaka, S., Tuuli, M. M., & Dainty, A. R. (2013). Success is a dependent factor over CSFs. This traditional approach of considering success fails to consider the link between success factors and success criteria.

Gunasekera (2009) has inquired the relationship of success factors to success criteria based on the perception of different participants. But he has used only the traditional criteria of time, cost and quality. There may be factors critical to organizational success in the long run though the same factors are not critical to achieve particular aspects of project success.

Muller and Jugdev (2012) also stressed the need of research that examines causal relationships between success factors, project success and organizational success. Most of the identified factors through the said studies cover different disciplines or knowledge. However, less attention has been drawn on specific areas such as human resource related factors (HR knowledge area).

Gunathilaka et al. (2013), Mitra & Tan (2012) and Tabish & Jha (2011) stressed the importance of conducting studies in different context/countries.

The construction industry is one of the largest job creating industries in developing countries and has become highly competitive with the advent of globalization (Nguyen, Ogunlana and Lan, 2004: 404–413). Having this, with rapid changes happening in the turbulent environment and in construction industry, it is curious whether previous research findings have become obsolete.

Report on Ethiopian economy, Volume VI 2006/07:237), shows that the role of the construction industry in terms of creating employment opportunities especially in urban areas is becoming visible. According to the 1999 Labor Force Survey (LFS), of the total employed persons in the country which was estimated at around 25 million, 0.9 percent was estimated to be in the construction industry.

Contractors, consultants/project managers, engineers, supervisors and foremen in the industry are increasingly finding it difficult to attract new clients. Furthermore, it is unclear what actions need to be taken to improve project success. The construction industry in Ethiopia is challenged by several problems which tend to confront the sector and thus making efforts at developing the construction industry is very difficult and complex.

As (Asteway, 2008:6), the underlying problems of the construction sector can be classified into two main categories. The first is related to the consequences of the fact that the sector is not viewed and planned in an integrated manner, but rather, operates with fragmented, unrelated and often conflicting components. Liberatus K. Mrema and Simon K. Mhando summarized in their article on causes of failures of housing projects Case of Unfinished Buildings in Dar es Salaam Roles played by Architects are marginalized and

hijacked by Clients in avoiding professional fees. Essentially, a new approach is needed in the construction industry to ensure project success like ESLSE.

1.4 Research questions

1.4.1 Main Research Question

- How much are the critical success factors of construction projects of ESLSE applied?

1.4.2 Specific Research questions

- How much comfortable are the construction projects of ESLSE?
- How much competent are the construction projects of ESLSE?
- How much committed are the construction projects of ESLSE?
- How much well communicated are the construction projects of ESLSE?

1.5 Research objectives

1.5.1 Main objective

To assess the critical success factors of the construction projects of ESLSE.

1.5.2 Specific objectives of the study

- To assess the “comfort” of ESLSE construction projects;
- To assess the “competence” of ESLSE construction projects;
- To assess the “commitment” of ESLSE construction projects;
- To assess the “communication” of ESLSE construction projects;

1.6 Limitations

This study covers seven active ESLSE projects. The findings of the study cannot be generalized to other construction companies of different features like in location, ownership and the likes. Other companies may not have similar approach and culture. For example, private owned companies may not have similar corporate culture with governmental organizations like ESLSE. Therefore, its industry players (consultants/project managers and contractors) have a different perception of what

constitutes project success. The strategy mix and goals of every company are not carried out with same sensitivity on COMs. Most of the time private owned organizations are aggressive on their goals. That is, some build to own, to sell and to accommodate employees and rent out some space. Therefore, the influence on the quality level required, amount of money to be utilized and level of urgency in executing the project varies. This study is limited to active ESLSE projects at the time of the study conducted, only out of many government owned companies having construction projects. It does not cover the private owned companies' projects.

1.7 Significance of the study

This study will be very significant in assessing the effects of e-marketing on customer satisfaction. The researcher expects that this paper will provide viable information for assessment of related topics. In addition, the findings of this study will also be used as source of information for researchers and other concerned bodies who are working and interested to work in this area and will serve as a bench mark for researches who want to conduct researches on this and related areas.

1.8 The scope of the study

The study scope encompasses seven active ESLSE construction projects which are active. Six of them are found in Modjo and the rest one is found in Addis Ababa. The projects launching date is different, but is still executing due to various reasons.

1.9 Overview of the study

Chapter one is an introduction and highlights the background of the study, statement of the problem and research questions. This chapter also focuses on the objective, significance and scope. Finally the chapter tries to show the limitations of the study. Chapter two will consist of a review of the literature on critical success factors in relation to project success in the construction industry. It will also present a review of the literature on the skills that should be possessed by the project manager. Chapter three will explain the research methodology used and, in particular, the data collection method, the questionnaire design, the sampling method and data analysis. Chapter four will present discussion and analysis of collected data using descriptive analysis. Chapter five will contain a summary of the previous chapters, and will present conclusions and

recommendations based on the empirical findings. Recommendations will be made for future researchers and for the projects of ESLSE.

CHAPTER TWO

Review of Related Literature

2.1 Definitions of terms

Project - is a temporary endeavor undertaken to create a unique product or service, temporary means that the project has a definite ending point, and unique means that the product or service differs in some distinguishing way from all similar products or services (PMI, 1996, p.4).

Characteristics of Construction projects- The management of construction project has some differences from the management of other projects. The differences mainly stems from the nature and characteristics of construction projects. The consideration of these differences is important for successful management of construction projects.

Generally construction projects:

- Are usually capital intensive, complex; and require significant management skills, involvement and coordination of a wide range of experts in various field. (Chartered Institute of Building, 2002).
- Are usually undertaken outside; hence, they are susceptible to many variables such as weather and traffic (Gould & Joyce, 2003).
- Must address the geography and conditions of the project site and the relation of the project to the environment. (Project Management Institute (PMI), 2007).
- Are subject to a variety of laws and regulations that aim to ensure public safety and minimize environmental impacts. (Bennett, 2003).
- Compared to most other industries, construction projects involve relatively intensive labor use, and consume large amount of materials and physical tools. (Jekale, 2004).

Project Success- A project is considered a success if the project management is a success and the project product is a success (Shojaie et al., 2016).

People say that a project is successful as far as project management is concerned if the project is complete within time, within the given budget and meets the customer requirements with the specified quality (Bodicha, 2015) should have a valid and realistic time scale with accurate cost estimates. Moreover, Willard (2005) has expressed that project management has traditionally viewed as success or failure based on three metrics. They are on time, on the budget, and meets specifications.

Construction Project Success

Previously, a definition for “a construction project” was discussed and the most elusive part is “success”. Baker et al. (1988) suggest that there is no such thing as an absolute success in a project and there is only perceived success. Freeman and Beale (1992) illustrate that architects usually place emphasis on aesthetic aspect of a building while the engineers usually focus on the structural aspect of a building. According to De Wit (1988), measuring success is complex because it depends on the stakeholders’ points of view, and it is time dependent.

Frödell et al. (2008) categorized clients concerning whether the client is a private or a public company. The contracting company (contractor) is the next very important participant who is fully responsible for the successful project delivery/execution. Employees/staff are important for the achievement of long-term and short-term objectives. Therefore, construction project success could be defined as:

“The perceived degree of achievement of predetermined performance objectives and participants’ expectations of the execution of a construction facility or a service”

Success Factors (SFs) and Critical Success Factors (CSFs)

Han et al. (2012) define SFs as factors that influence, constitute as well as determine the success of a project. SFs are those inputs to the management system that lead directly or indirectly to the success of the project (De Wit, 1988; Cooke-Davies, 2002). SFs are further classified under two main categories, one being hard, and objective, tangible and measurable while the other soft, subjective, intangible and less measurable (Erling &

Arne, 2000; Chan et al., 2004; Erling et al., 2006). According to Sanvido et al. (1992) the concept of project success factors was first introduced by Rubin & Seeling (1976) but the term CSFs in the context of project management was first used by Rockart (1982). Rockart (1982) defines CSFs as those relatively small numbers of truly important matters where a particular industry should focus its attention in order to achieve success.

It has been agreed that CSFs are vital for managers to improve their organization in the sense that it will indicate that the progress is being made in particular areas. It should be acknowledged that the contribution made by Pinto and his colleagues to this area. Slevin & Pinto (1986) proposed a model with ten generic CSFs which is known as Project Implementation Profile (PIP).

CSFs will certainly differ from country to country depending on their respective operating environment, policies and legal constraint. Hence, they are not a standard set of measurement or key indicators, which can be applied to all industry (Yong & Mustaffa, 2012).

Chan et al. (2004) did a thorough literature review related to CSFs in seven major management journals and identified SFs. Belout & Gauvreau (2004) re-tested in a field study, the theoretical model used by Pinto and Prescott and developed by Slevin and Pinto in order to further investigate the impact of the life cycle stage, type and structure of a project on the relationship between the CSFs and PS. Takim & Adnan (2008) identified factors (project success effectiveness measures) and assessed their level of success criticality to the Malaysian construction projects. In addition to direct studies on PSFs/CSFs, studies on causes/reasons for project failure is valuable input to identifying CSFs. However, various attempts have been made by different researchers to determine CSFs in construction projects in other countries. A number of variables influencing PS have been proposed. Some variables are common to more than one list, but there is no general agreement on the variables (Chan et al., 2004). Yong & Mustaffa (2012) further suggests that CSFs could be grouped under different categories depending on the evaluation dimension that the researchers are looking at.

Hence, every country or organization should have specific CSFs identified so that tailor made approach can be applied.

Table 2.1. Critical success factors by different authors

Source	Critical Success Factors
baker, murphy and fisher, 1983	Clear goals, goal commitment of project team, on-site project manager, adequate funding to completion, adequate team capacity, accurate initial cost estimates, minimum start up difficulties, planning and control techniques, task-social orientation, and absence of bureaucracy.
Clealand and king, 1983	Project summary ,operational concept, top management support, financial support, logistics requirements, facility support ,market intelligence, project schedule, executive development and training, manpower and organization, acquisition ,information and communication channels and project view
Morris and hughes, 1987	Project objective, technical innovation uncertainty, politics, community involvement, schedule duration urgency financial contract, legal problems, and implementation problems.
Pinto and sleven, 1987	Project objective ,top management support project planning, communication with client ,human relation ,technical tasks, client acceptance ,project control
Tukel and rom, 1995	Top management support, client consultation, preliminary estimates, availability of resources, project manager’s performance.
Nguyen, Ogunlana & Lan ,2004	<p>Comfort; Continuing involvement in projects of all stakeholders, Comprehensive contract documentation, Availability of resources, Adequate funding until project completion, Competent project manager, Proper emphasis on past experience</p> <p>Commitment; Top management support, Clear objectives, Commitment to the project, Political support</p> <p>Competence; Proper emphasis on past experience, awarding bids to the right project manager/contractor, up-to-date technology utilization ,multidisciplinary/competent project team</p> <p>Communication; Frequent progress meetings, project plans updated regularly</p> <p>community involvement, shared project vision, handover procedures</p>

Dimensions of Construction Project Success

Most of the researchers have grouped success criteria into different components of project success for which they often refer to dimensions. Baccarini (1999) proposed two distinct components (product success and project management success) of project success.

Project success, project management success and project performance are sometimes a bit confusing because, these words have been used in different ways by different researchers in the literature. Project performance often refers to project management success. Semantically, project success is measurable only after the project is completed (Morries and Hough, 1987 as cited in Han et al., 2012), while project performance is measured during the life of the project (Cook-Davies, 2002 as cited in Han et al., 2012). The concept of success in a construction project, according to some researchers, is corresponding to efficiency and effectiveness measures (Brudney and England, 1982; De Wit, 1988; Pinto and Slevin, 1988: 1989; Smith, 1998; Belout, 1998; Atkinson, 1999;

Project efficiency is an important contributor to stakeholder satisfaction and overall project success, but shows quite clearly that other factors contribute significantly to both.

2.2 Theoretical Review

This chapter reviews the literature on the critical success factors in the construction industry. It shows the need to look beyond the triangle of time, cost and quality which impacts project success. For the sake of the discussion, critical success factors are grouped into four categories, namely: comfort, competence, communication and commitment (COMs). The project managers and contractors are positioned as the major role players in the construction industry. Thus, an in-depth discussion on the skills that should be possessed by the project manager is also undertaken.

The aim of the literature review is to provide a context for the entire research study. It is within this context that the researcher is able to develop a solid case for undertaking the study. Reviewing existing literature, on the issue in question, allows the researcher to identify the “gap” that exists. The researcher achieves this by performing an in-depth critique of the existing literature. An in-depth critique leads to identifying deficiency on the existing literature and making possible contributions. Furthermore, the research

methodology which has to be used in this study is built on the basis of the literature review. Using the correct research methodology can guarantee that the findings are meaningful to the researcher.

2.3 The Four COMs approach

Critical success factors are those inputs to the project management system that directly increase the likelihood of achieving project success. Nguyen, Ogunlana and Lan (2004: 404-413) identified and grouped success factors under four categories which are entitled the four COMs: comfort, competence, commitment and communication. The high number of project failures points the existence of unidentified critical success factors. Project success in the construction industry in Ethiopia, and in most developing countries, is measured by the “golden triangle” parameters such as time, cost and quality (Ojiako, Johansen and Greenwood, 2008: 405-417).

2.4 Comfort

2.4.1 Involvement of Stakeholders

Swan and Khalfan (2007: 119-130) advise that management of external stakeholders, such as the public, are crucial for successful project delivery. The interest of stakeholders has to be managed and influenced in a manner that ensures project success. Stakeholders can be classified in two categories: primary and secondary. Primary stakeholders have a legal contractual relationship to the project. For example, a waterproofing technician is subcontractor is hired to provide waterproofing works for the building to be constructed. Secondary stakeholders do not involve in the daily activities and decisions but can influence the project. For instance, the community has significant bargaining power nowadays.

Periodic stakeholders’ analysis should be done by the project manager (PM) at various stages (planning, executing and closure) of the project (Assudani and Kloppenborg, 2010: 67-80). This would enable the PM to address any issue from active stakeholders before they negatively affect the project. The community is most likely interested in environmental impact that would endanger their long-term health. For instance, the building of a tannery would, in the long-term, put the lives of the community nearby in

danger, due to its emissions and sewerage. Being able to get information on the internet, secondary stakeholders are aware and have high bargaining power.

Politicians' views on the project are motivated by different interests, namely: to score political points; to boost one's political career and to be genuinely concerned of the well-being of the community. Projects at municipality level may result in residents' rates to create belongingness to contribute in financing and maintain the result afterwards. Politicians would gamble on this in a bid to score political points, more especially if local municipality elections are put ahead. It is difficult for unsuspecting communities to discern whether the politicians are raising concerns on the project in a bid to boost their political career or are genuinely concerned about the community. Hence, the project manager (PM) should keep a close watch on politicians as they can easily mobilize communities to act against the project or make demand that would delay the project.

Municipalities are headed by leaders who are member to certain political parties. The executive committee of the leading political party can influence the municipality to reduce funding for the project. Successful management of stakeholders is dependent largely on the PM developing a well-defined communication plan (Rowlinson and Cheung, 2008: 611-623).

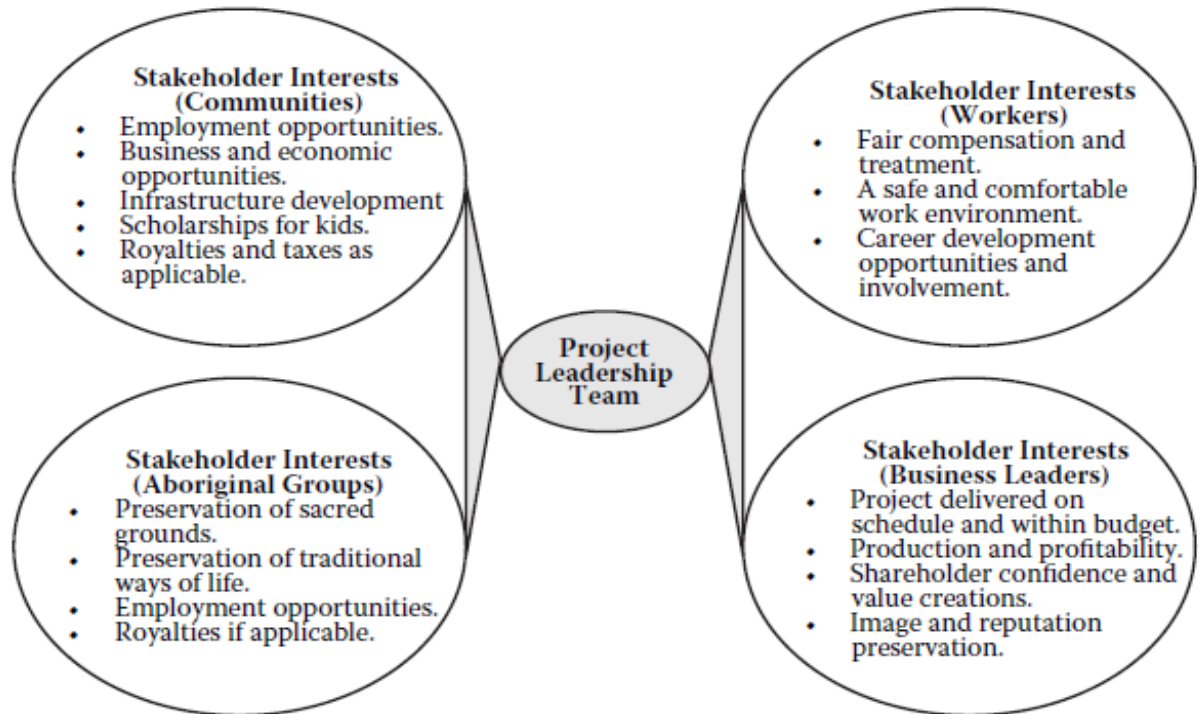


Figure 2.2 Sub classes of stakeholders (source unknown)

2.4.2 Competent Project Manager

The competent project manager has to have both technical and “soft” skills. The technical skills that should be possessed by the PM in the construction industry include being a subject matter-expert (SME). That is, s/he must have an in-depth knowledge of the structural design of the structure under construction. Hence, PM’s have a degree or a national diploma in architecture. Having such knowledge enables the PM to provide leadership in the manner in which the construction must be conducted. Contractors develop respect for a PM who is able to give direction on technical challenges of construction.

Soft skills complement technical skills of the PM and require constant development. These skills include: team management, emotional intelligence, transformational leadership and conflict management. One of the crucial primary tasks of the PM is to carefully define roles and responsibilities of the project team members (Anantatmula, 2010: 13-22). Based on individual strengths and weaknesses the PM should define team roles. In this way, the PM won’t have to intervene to team members on trivial matters, rather focuses on the critical ones.

The construction industry is an emotionally demanding environment. Hence, the PM has to develop sufficient capacity to solve difficulties by carefully using his/her emotions (Corona, 2010: 22-34). The careful use of emotions (emotional intelligence) by the PM can contribute immensely towards achieving project success. Careful analysis of all the stakeholders' emotions allows the PM to respond strategically that will be taken by all concerned. For example, the community members would be emotional about replacing a memorial building by a public school building. The PM has to carefully grasp the extent of the community's emotional state and devise a strategy that would highlight the importance of constructing a public school building. This strategy would also entail showing empathy to emotional attachment that the community has developed towards the building.

Projects bring about change in organizations. Thus, the PM's level of emotional intelligence will determine how s/he responds to the change (Clarke, 2010: 604-624). The rate of change within the construction industry is fast and the PM needs to be decisive at all times. Nurturing the skill of emotional intelligence will prove useful for the PM in facilitating project success.

Malach-Pines, Dvir and Sadech (2009: 268-291) assert that project managers achieve a high degree of project success when they manage projects which match their personality. Moreover, the size and complexity of the project calls for varying degrees of technical and personal skills. A subject-matter-expert (SME) project manager should avoid the temptation of micromanaging in a highly technical project. Limsila and Ogunlana (2008: 164-184) suggest that a style ensures high work performance and organizational commitment of subordinates. Transformational leaders are able to inspire subordinates to transcend their own interests for the benefit of the project. Moreover, they are able to leave a profound effect on everyone that they interact with at any organizational level.

Achieving project success within the construction industry would also require a comprehensive patch up of quality management. Lack of clear quality standards has made it difficult to achieve project success within the construction industry. Transformational leadership is crucial in implementing a comprehensive total quality

management program (Rui, Emerson and Luis, 2010: 7-18). As a transformational leader, the PM would be able to gain the needed trust from project team members and stakeholders alike. The trust gained would allow the PM to make the necessary quality adjustments which will facilitate project success.

Projects, by their nature, require individuals from different backgrounds, cultures and expertise to work towards a common goal. This is a place for conflicts to erupt as individuals with strong egos are likely to clash. Thus, it is increasingly becoming important for the PM to develop conflict management skills. Resolving conflicts would require the PM to determine the most appropriate attitude to have during negotiations to facilitate the desired outcome. Attitudes that would not facilitate the desired outcome would then be avoided (Yousefi, Hipel and Hegazy, 2010: 99-107). For instance, the PM should maintain an intensive effort to listen attentively to antagonistic parties and remain impartial at all times. Essentially, the PM must seek win-win outcomes for parties concerned. This would push the parties to take the “middle road” by encountering short-term loses in order to gain in the long-term.

Furthermore, successful project managers have exhibited seven traits which facilitate project success, besides technical and soft skills. These traits include: proactive in nature, being enthusiastic, being finance /business oriented, sense of leadership, being analytical, autonomous and challenge seeker. Successful project managers are all self-starters. Taking an initiative in projects signals a high level of confidence by the PM and commitment to the organization. Enthusiastic project managers find it easy to motivate those around them. Having a natural touch for business enables the PM to solve complex problems, respond to change faster and even anticipate change beforehand. Scenario planning has elevated successful PM’s head and shoulders above their peers (Wideman, 2010: 7).

Successful project managers naturally want to lead (Wideman, 2010: 7). This falsifies the belief that project managers get into the profession unplanned. Project managers, that want to lead, naturally are keen to learn new skills and embrace challenges that are common in projects. Avoiding the trap of “paralysis by analysis”, successful project

managers pass decisions at the right time. Hence, successful PM's are decisive when dealing with change. Successful project managers are autonomous naturally. For example, successful PM's know exactly what to do, when to do it and how it should be done. The organization develops immense respect and trust towards the project manager. Wanting new challenges is synonymous with successful project managers. The abovementioned traits clearly form a status quo for choosing project managers that are best fit to facilitate project success.

2.4.3 Availability of Resources

It is difficult for the PM to gain control over resources. The PM is often left at the mercy of functional managers since s/he has no positional/functional power within the organization. This can easily create inevitable conflict between the PM and functional managers. Therefore, the PM has to formulate a resource management plan considering relevant stakeholders to ensure availability of resources when needed. This plan has to be well developed and dispensed to every section that takes part in the project (Newton, 2005: 110).

A resource management plan is not infallible. Unforeseen uncertainties can still impede the availability of resources. For example, the sharp rise in the demand of iron bar can adversely affect its availability. Due to birr devaluation and under invoice import circular number FXD/052/2018 of National Bank of Ethiopia, the price of iron bar soar more than three fold. Hence, the availability is concurrently affected by smuggler national and regional distributors who speculate that the price would go up. The usage of a feeding buffer at an insert point is helpful in dealing with uncertainties (Zhen Yu, Wei Yang and Jian, 2010: 1056-1060). The PM exerts control over the project by dividing the feeding buffer into three zones of equal size, as seen in Figure 1 (Steyn, 2004: 132).

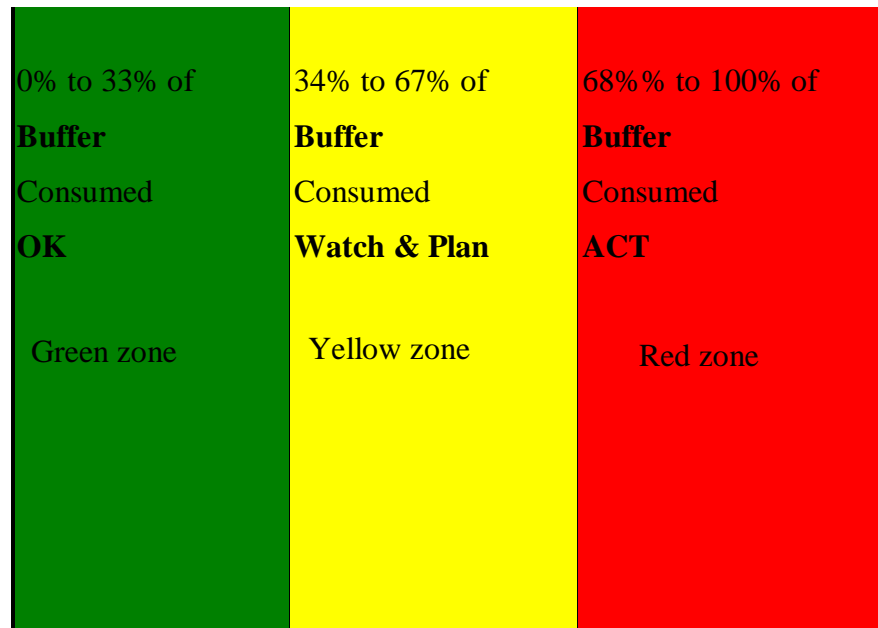


Figure 2.3 Monitoring of buffers (Steyn, 2004: 132).

The three zones are one third of the whole buffer. The PM on the first (green) zone should not take any action. On the second (yellow) one, the PM should get prepared for the action to be implemented by the PM as soon as the third zone (red) is consumed, in order to avoid the entire project duration to be prolonged due to shortage of resources.

2.4.4 Adequate funding through the project

Project funding is the main forerunner of all project activities. Without funding, the necessary materials cannot be purchased in time for the project to start up. The PM needs to create a complete financial plan for the entire project. The financial plan has to consider the project activity schedule plan. This will ensure that no activity is hampered by the unavailability of funds to pay for overtime work and the like (Johnson, Scholes and Whittington, 2006: 305). Research has shown that public sector projects experience funding problems more than private projects (Zwelisha, 2010). This is due to several problems, namely: structural issues, political issues, financial management capacity and change of leadership.

The organizational structure of government makes it difficult for funds pass through it smoothly. For instance, in national projects, funds come all the way from the federal

government through the region before they reach the local municipality level. The amount of bureaucracy in between the spheres delays funds for projects in most cases. Political support has proved vital in public sector projects. Projects that would be most beneficial to the citizenry are most likely to get funding with immediate effect. This phenomenon is mostly prevalent at local municipality level and is fueled by the benefit-cost analysis approach (Samuelson and Marks, 2006: 17). Officials of local municipalities find it difficult to finish community projects within the planned date due to the availability of funds. Municipalities are mostly busy with a range of projects which calls for practical financial management. A change of leadership, especially at a local municipality level, can signal a change of priorities. Hence, funding for projects can easily be minimized or even cancelled and funded elsewhere.

2.4.5 Comprehensive Contract documentation

All relevant stakeholders have to enter into contractual agreements regarding the activities to be performed in the project in detail. The PM has to ensure that even internal stakeholders, such as functional managers, have signed performance contracts. The contracts must clearly stipulate the quality, time and cost parameters to be met. If no contract is signed by parties, it would be difficult to implement any project goals (Kerzner, 2006: 826). The growing number of lawsuits, nowadays, between contractors and project managers, is not encouraging (Sookhalal, 2010). This calls for the simplification of the contract documents and involvement of a mediator before a lawsuit is considered. The mediator should have in-depth knowledge of the construction industry.

2.5 Competence

2.5.1 Utilization of up-to-date technology

The construction industry has seen immense technological developments over the past ten years in developed countries. Developing countries, like Ethiopia, are facing problems of selecting the right technology for the given country. This problem gets worsened when the project team fails to operate the technology. Adopting and utilizing new technology to its full potential is critical in achieving a competitive advantage in the

construction industry. The PM has to identify all technology needs for the project during the briefing (scope formulation) stage (Nguyen, Ogunlana and Lan, 2004: 404-413).

The usage of technology in hi-tech work functions has been associated with project cost successes (Yang, 2007: 1041-1051). The project manager needs to bear in mind that time and costs are inseparable (Kerzner, 2006: 597). Thus, any technology that would shorten time during the execution phase of the project should be carefully considered. Ideally, the technology chosen should not require costly and frequent maintenance and training for employees. The PM should also realize that the cost savings may only be realized in the long-term when all employees are fully trained. Thus, the payback, the period to reimburse the initial capital outlay for the new technology should be carefully calculated.

2.5.2 Proper emphasis on past experience

Tacit knowledge plays a critical role in enhancing organizational performance and achievement of competitive advantage in the construction industry (Pathirage, Amaratunga and Haigh, 2007: 115-126). Tacit knowledge is gained over the years by trial and error and is mostly not documented. The inclusion of the competent PM during scope formulation will enable him/her to ascertain the level of implied knowledge needed for the project. Harrison (2007: 15) points out that a competent PM would then look within the organization and assess if adequate levels of tacit knowledge exist and if a suitable person may be required to ensure the smooth execution of the project. Chan, Wong and Lam (2006: 909-927) point out that the PM should have previous experience in a given project in order to increase the likelihood of achieving project success in this sector.

The PM should encourage project members to document implicit knowledge gained from the project. A project information management system (PIMS), that gives common access to relevant parties, should be utilized (Steyn, 2004: 51). This would ensure that mistakes never be repeated. Experience gained in executing public sector projects is often lost when the PM leaves the organization. Execution of public sector projects is particularly difficult, due to the number of stakeholders involved. Up-and coming project managers can learn a lot from experienced PM's if their experiences are documented in

systems such as the PIMS. A socially cohesive environment needs to be created in order to encourage tacit knowledge to be communicated (Subashini, 2010: 36-39). This is due to the fact that tacit knowledge is elusive and embedded in the individual. The individual would be reluctant to share such knowledge if trust and mutual commitment is not present.

2.5.3 Competent team

The PM has to assemble the most competent team and take into consideration cultural differences. Muller, Spang and Ozcan (2009: 70-93) advise that project team members from different cultural backgrounds will have varying decision – making styles. Cultural differences can cause unnecessary tension amongst team members, if not addressed appropriately. A thorough skill gap analysis has to be conducted by the PM and relevant functional managers. Additional training should be provided to team members that get to do the actual work in the project. Furthermore, London, Chen and Bavinton (2005: 295-318) propose that a positive and continual response to change is the best way of addressing cross-cultural communication difficulties within teams. Project management teams can achieve a competitive advantage by being engaged in a steady flow of hi-return projects (Melkonian and Picq, 2010: 79-90). The top management is expected to be active in lining up projects with a view of avoiding keeping the project team idle. On the job training that is achieved by trial and error is incomparable to other types of trainings. Hence, engaging the project team on a steady flow of hi-return projects offers an excellent opportunity to learn new skills.

2.5.4 Granting bids to the right project manager or contractor

The process of granting of bids to the right project manager or contractor has increased the level of competition in the construction industry, especially in the public sector. Most governments in the developing countries, like Ethiopia, have limited financial resources. Therefore, governments tend to award bids to contractors that have a proven track record and hold the most cost-effective proposal. A benefit-cost analysis should be carried out prior to the awarding process (Samuelson and Marks, 2006: 17). This provides clarity on the amount to be spent on the project.

The best method to use when selecting contractors is the multiple criteria (Phillips, Martin, Dainty and Price, 2008: 307-320). The multiple criteria method considers the following issues: understanding of client's objectives, construction practices, successful track record, quality management procedures, and transparency of cost data and understanding of partnering. Moreover, the method also considers existence of established health and safety policy, understanding of best value and technical ability. The ability of contractors to clearly comprehend the client's objectives in the project scope document is crucial in achieving project success (Harrison, 2007: 13). Clients nowadays are becoming more knowledgeable about the building construction industry (Toor and Ogunlana, 2009: 149-167). Project objectives should ideally be specific, measurable, assignable, and realistic and time related (SMART). A successful performance of previous projects promises well for the bidding contractor. This track record will go a long way in proving that the contractor can be trusted. Adherence to quality management procedures proves the credibility of the contractor. For example, the contractor should be listed as an "active" member on the EIA (Ethiopian Investment agency) list of contractors. Only realistic costing of the project is undertaken and under costing is discouraged. Under costing, with a view of increasing chances of being awarded, affects the bidding process.

2.6 Commitment

2.6.1 Top management support

Projects come about due to a strategic objective that the firm has to achieve (Johnson, Scholes and Whittington, 2006: 504). Therefore, top management support has to be a must until the project closure. Top management support the provision of funds and making resources available, moreover it provides clarity on the project objectives and reassuring project team members that they will be valuable after the project. Changes that would come due to the project can cause team members to be highly skeptical of their future in the organization. This will directly affect their level of performance towards the project.

2.6.2 Commitment to the Project

Changes induced by the project can even result in individualism, where each person pursues their goals which are against those of the project (Nguyen, Ogunlana and Lan, 2004: 404-413). The PM needs to avoid such situations from occurring, by conducting an open briefing session. Irregular project visit by top management provides encouragement to the project team. In order to avoid individualism, the PM has to draw up a linear responsibility chart (LRC) indicating exactly the person responsible for a specific activity (Kerzner, 2006: 200).

Organizations have to create jobs that offer a clear growth plan for project employees to give optimal commitment (Jafri, 2010: 62-68). Project employees have to perceive a strong component of professionalism about their jobs. An environment that encourages employees to consider project management as a profession is a breathing ground for innovation. Employees that feel valuable are most likely to be innovative and constantly seek better methods of improving the quality of work performed. A low level of organizational commitment from project employees is bound to translate to less than optimal performance in the project activities (Dwivedula and Bredillet, 2010: 79-88).

2.6.3 Clear objectives and scope

Project objectives have to be iterated and validated on a regular basis throughout the project life-cycle (Lindahl and Ryd, 2007: 147-156). The scope should be as simple as possible and cover all areas that may cause confusion. It is widely accepted that project scope changes are expected. This is due to the fact that reality can be different from what was expected. Othman, Hassan and Pasquire (2004: 248-258) believe that adopting a dynamic brief development (DBD) approach to the project scope will facilitate project success. However, scope change during the execution phase will cost more than if they were made at the initiation phase. It is also worth noting that costs and time are inseparable (Kerzner, 2006: 597). Research (Forsythe, 2008: 485-496) reveals that construction clients make quality judgments progressively throughout the project. This supports the DBD approach of scope management.

2.6.4 Political Support

Public projects are easily influenced by the politics of the day. For example, condominium projects have to get as much political support as possible in a bid to convince the citizenry of the need to suffice the nation. Opposition parties in parliament may try to influence the citizenry to go for a partnership house construction with fast, manageable and low cost approach. This can prove to be a nightmare for the condominium without political support from the ruling party in government. Commitment from legitimate stakeholders, like the non - governmental organizations (NGOs) and ruling party in parliament, remains crucial to the success of public projects (Jacobson and Choi, 2008: 637-657).

2.7 Communication

2.7.1 Shared Project Vision

The project manager has to identify the interests of all relevant stakeholders, and ensure that they buy-in to the project vision (Yang, Shen and Ho, 2009: 159-175). The project sponsor has to be someone from an executive management position with considerable influence within the organization. The project vision has to be continuously communicated with relevant parties from initiation to closure of the project. A well developed and articulated vision has an immense contribution towards achieving project success (Christenson and Walker, 2008: 611-622). A vision creates a collective ideal that employees and management alike aspire to achieve. Optimal performance from employees cannot be expected in the absence of an enduring vision and supportive environment.

2.7.2 Project Plans updated regularly

Once the project objectives have been set and the scope defined, the PM has to start with the second phase of planning. The project plan is a living document which has to be updated as the project progresses. The PM has to use tools such as the work break-down structure (WBS) to break down work into activities assignable to specific individuals.

Special focus must be given to activity definition and project plan development as these prove to be critical planning processes (Zwikael, 2009: 372-387).

2.7.2.1 Purpose of planning

The primary aim of engaging in project planning is to execute the project scope. To achieve an organizations strategic plan projects should be implemented timely as per the duration set in scope formulation during initiation phase. Furthermore, the PM should realize that time and cost managements are inseparable in project management (Kerzner, 2006: 597). Thus, planning is undertaken to ensure that the set time line is satisfied while costs are kept within the budget.

Project planning helps to create a benchmark for execution (Harrison, 2007). The benchmark is then used at execution to provide direction for the project team as events unfold. The benchmark set during planning clears any ambiguity that might exist as events unfold during execution, thus facilitating decision making. Benchmark setting should be conducted by the PM in consultation with experienced project team members and line managers.

Organizations use projects as a tool for implementing their strategic objectives that may be aimed at changing the manner in which the organization operates. Thus, projects can be viewed as change agents. The PM needs to recognize this fact and ensure that the strategic objectives of the organization are reflected in the planning process. The strategic objectives may not be clearly stated in the scope statement, thus the PM should be present during the scope formulation process (Msani, 2007: 20).

The unique nature of projects brings about an element of uncertainty when execution is considered, that is, reality may facilitate or hinder the execution of the projects. The level of uncertainty may be minimized by identifying all the possible unknown elements associated to the project. This can be examined closely by considering Figure 2.3 below.

Unforeseeable 4	Unforeseen “Surprises” 3	Unknown
Foreseeable 1	Foreseen 2	

Known

Figure 2.4 Minimization of unknown elements (Harrison, 2007: 8).

The PM should ideally start in the first quadrant (Foreseeable) elements which are not easily familiar but can be identified by asking thought-provoking questions concerning the possibilities that reality can bring. These elements may be identified by specialists through experience and engaging in detailed planning (Harrison, 2007: 9).

Project managers should not fall in the trap of trying to identify the (Unforeseeable) elements of the project. Being the probability of occurrence very low, thus, it is irrelevant to focus on these elements. For example, a soccer player being stung by bee during a game has a low probability of occurrence. The ratio is about 1: 10 million, for argument sake. Therefore, these elements can be classified as unmanageable risk that is closely associated with the environmental conditions where the project will be carried out (Msani, 2007: 19).

This phenomenon makes planning to be one of the most difficult aspects of the project that the PM has to deal with. Research (Kerzner, 2006: 398) has shown that the PM has to spend a reasonable amount of time in dealing with this dynamic model, as this has a direct influence on the project success. This then raises the question “At what point must one stop planning and begin with execution”. One should stop planning when the final “picture” is closely similar to that of reality, thus ensuring a smooth transition. The idea here is to be able to “hit the ground running” at execution (Burke, 2006: 180).

Planning enables the PM to identify the organization's strengths and weaknesses in terms of resources to be utilized in the project. An analysis of the strengths and weaknesses gives the PM a better understanding of whether the organization has what it takes to deal with the challenges that the project will raise (Kerzner, 2006: 190).

2.7.2.2 Nature of planning

The project life cycle is a framework upon which the project is carried out. The output (scope statement) from the initiation phase (first phase) is used in the planning phase (second phase). The execution phase (third phase) follows. The project plan that is developed in the planning phase is then used at execution. This shows the dependent relationship between the phases with the planning phase providing a transition and a preparatory period before execution commences (Harrison, 2007: 17).

Project planning can be divided into two parts, that is, the planning process (dynamic part) and the project plan (static part). The dynamic part involves communicating planning information to the project team and stakeholders, pledging their support. Firstly, the information that is communicated includes how the scope should be broken down into manageable tasks by using the work breakdown structure (WBS). Secondly, it also includes establishing relationships between activities. Thirdly, a consensus has to be reached on the estimated project duration by using certain tools and techniques. Fourthly, goals and objectives have to be set and based on the available information in the scope statement. Lastly, information has to be communicated in order for the following sub-plans to be formulated, that is, the quality, resource and control (Burke, 2006: 180).

The outcome (project plan) of the planning process is static, as mentioned above, and represents a "picture" of what reality should be at execution. Though the document is static, the PM should make changes from time to time in the project plan as progress goes. Changes made in the project plan have to be reflected in the scope statement (Msani, 2007: 21). Therefore, planning is continuous and iterative as shown by Figure 2.4.

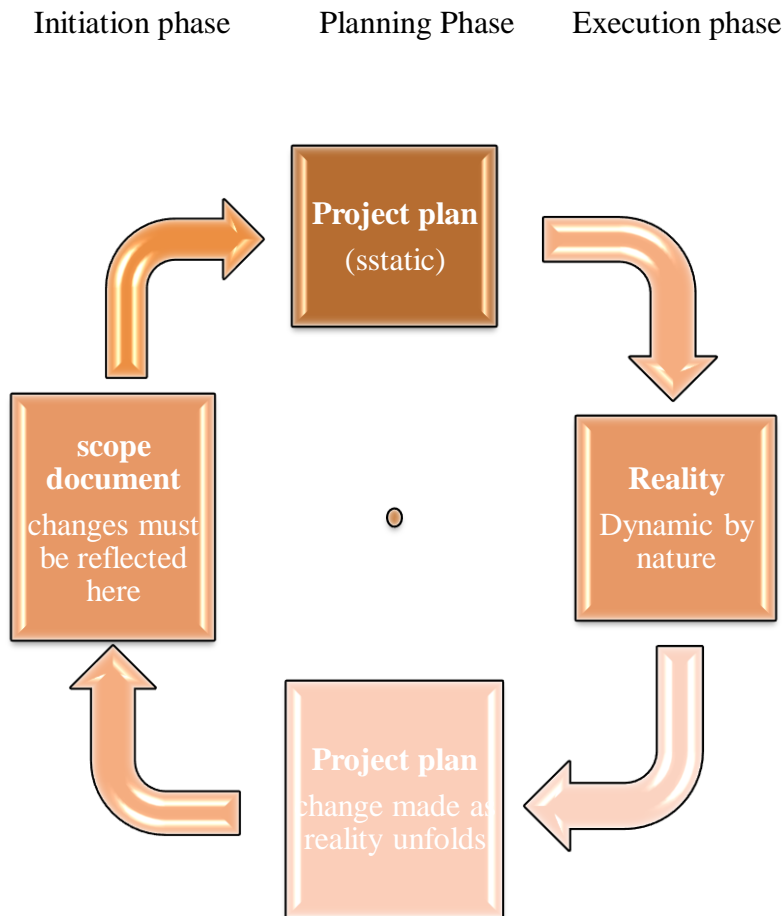


Figure 2.5 Continuous and iterative nature of project planning (Msani, 2007: 10).

The above figure shows that scope changes are inevitable in a project. Therefore, the scope formulation process at the initiation phase should include a scope change control system which will ensure that changes are made by authorized people in consultation with all stakeholders (Burke, 2006: 105).

2.7.2.3 Planning Process and Outcome

Goal and Objective setting

The PM, in consultation with line managers and the project team, must go through the process outlined below in order to be in a good position to execute the scope. The level of detail that will be shown will depend on the experience they have in the industry.

(a) **Outcome-** a consensus has to be reached on the final bottom line that the client expects regardless of the manner in which it will be achieved.

(b) **Goals**- targets that have to be reached so that the outcome is what the client has desired.

(c) **Objectives**- these are things that have to be achieved so that the scope is realized. The objectives must meet the scope 100%.

2.7.2.4 Developing objectives

Time dimension

Using the WBS the PM should plan the time each work takes. A decision has to be made on the sequence of activities, that is, which ones would be done in series and concurrently in order to save time. The decision can be taken based on the following criteria (Kerzner, 2006: 420):

Hard-logic-These are activities in series at all times, e.g., the foundation of a building.

Soft logic -Either done in series or concurrent, depending on the consensus reached between the PM, line managers and project team; and

External dependencies -These dependencies may be beyond the control of the PM, e.g., government laws.

The PM can then use network analysis to join the activities in order to determine the project duration. Network analysis is one of the tools in project management that is used to give a pictorial representation of how the scope will be executed. By determining the critical path in the network, the PM is able to work out the expected duration of the project. Essentially, the PM can then control the project at execution by focusing on the critical path (Steyn, 2004: 132).

Cost dimension

Setting up cost objectives is driven mainly by “how” and “who” is involved in the process. The “how” part involves the process that will be used to execute the project. The

“who” part deals with the level of experience, skills and expertise possessed by the project team members who will carry out the work. The PM should bear in mind that errors made in cost estimation at the early stage of the project will be progressively more expensive to correct in later stages.

One of the widely used tools in cost estimation is the bottom-up method (Harrison, 2007: 23). Adding up WBS costs will give the PM a realistic overall cost of the project which should then be compared to the allocated budget.

Quality dimension

Research (Phillips *et al.*, 2008: 307-320) has shown that there are different views on what quality is. One view from operations states that quality is achieved by consistently conforming to the client’s expectations. On the other hand, quality is said to be in the eye of the beholder (client). One then takes the view that quality is achieved when the gap between the client’s perception and expectations, is closer.

2.7.3 Frequent Project Meetings

Meetings are a great way of communicating, but can turn out to be a waste of time, if not carefully planned. The PM has to formulate a detailed communication plan for the entire project duration. The communication plan has to stipulate the name of the person, “how often” and “what” information must be communicated. Essentially, the PM must communicate with the project team, legitimate stakeholders, the client and project sponsor (Newton, 2005:38). Frequent communication with relevant parties will ensure that everyone is on the same page as far as project progress is concerned.

2.7.4 Community involvement

Ethiopia, as a developing country facing such a high unemployment problem, all construction projects must consider utilizing local residents in order to gain support. Communities are most likely to oppose construction projects which will not offer them meaningful employment opportunities. Providing employment opportunities to local communities would indirectly enhance the organization’s brand standing as being socially responsible (Kotler and Keller, 2006: 286). The PM has to establish a single

point of contact (SPOC) amongst the community members. Communities are most likely to oppose construction projects which will not offer them meaningful employment opportunities. Continuous communication must be maintained with the community SPOC during the project so that any issues can be addressed immediately when they arise.

The PM should be aware that community members often have multi interests concerning the project (Teo and Loosemore, 2010: 216-235). Hence, it is crucial for the PM to identify a SPOC when engaging the community from the beginning. The involvement of the community is particularly important in public sector projects. For example, public facilities, like libraries and schools, are later vulnerable to be vandalized. This is mainly due to the fact that a sense of ownership was not instilled in the community by allowing participation in the construction process.

2.7.5 Handover Procedures

Karna, Junnonen and Sorvala (2009: 111-127) assert that the construction industry is increasingly becoming a service industry. Therefore, industry players have to become more client-oriented. That is, a new mentality of “working with the client” instead of “working for the client” must be developed. Working with the client also entails developing a detailed handover procedure stipulating the sequence of events and the people assigned on the day. Handover procedures must be developed and communicated to all relevant parties including top management.

2.8 Empirical review

De Silva et al. (2008) identified 46 challenges/issues faced by the construction industry of Sri Lanka and grouped those under 10 major categories. Furthermore, 13 main motivators which could be used to improve the performance of the construction industry were identified. Among these motivators, some sub factors were more important than others. However, they have used a relatively small sample. On the other hand, consultants, project managers and other staff who have real experience in day-to-day project operation have not been included.

Gunasekera (2009) identified 30 critical success factors which affect construction project success in the context of Sri Lanka and proposed compensatory model for industry to

increase project success. He has focused on controllable factors but not only by contractor but also client, consultant and an independent project manager. Though very important HR related factors have been identified he has not considered the relationship of these factors to project success and organizational success but he has grouped these factors under three traditional criteria: Time, Cost and Quality. Further, he has not considered moderating or mediating factors in this study. However, due to rapid changes happening, especially after the war, more contemporary studies are needed in these areas in Sri Lankan context. 36 success factors for public construction projects in India have been identified and categorized under 5 project success criteria by Tabish & Jha (2011). The study has revealed that some factors are of generic nature and would be required to be present to ensure success against two-three performance criteria while some specific factors are required to be present to ensure success against a certain criterion. Depending on the circumstances the relative importance of performance criteria varies. But the problem of this study is that only the engineers have been used and all the other important construction participants have been ignored. Also only the public sector has been focused on this study.

Kazaz et al. (2012) determined the most predominant 10 causes of time overruns in construction projects in Turkey and grouped them under 7 key factors. Further, they emphasize that considering the current construction atmosphere in Turkey in this respect, 40% of top rated factors belong to “financial factors”, while 30% of them are of “labour based factors”, 20% are of “managerial factors” and 10% are of “project-based factors”. Though they have elicited perception of project managers and site managers, other important players were not included for the sample.

Yong & Mustaffa (2012) identified 15 factors that are critical to construction project success in Malaysia and grouped under seven key headings. But sample is very small and not representative. However, the results suggest a strong consistency in perception between respondents in recognizing the significance of human related factors such as competence, commitment, communication and cooperation towards the success of a construction project. They further recommended that more emphasis should be given on improving the human related factors in order to ensure the successful implementation of a construction project in future. Furthermore, it is stressed herein that in order to improve

project performance and industry, it is needed to look into industry specific strategies and research to be carried out within the local context and business operating environment.

Mitra & Tan (2012) identified 9 reasons for project delays through a case study in a specific construction project in Saudi Arabia. They grouped reasons for project delay in the region under four main factors. But there is a big question about the ability of generalization of the findings due to a single case study. Furthermore, it is mentioned that the main causes of delay in project completion are mainly using of inferior tools and methods as well as having inexperienced staff in critical project coordination positions.

Chen (2012) analyzed the longitudinal data of 121 capital projects and findings were that the scope, quality, team, communication, risk, and change variables not only significantly affect project success, but have a strong, stable, discriminatory power to predict project success and failure. However, Chan focused on the project-initiation and planning phases and he acknowledged the need of future research to develop the findings reported here into more sophisticated models for predicting project success.

Garbharran et al. (2012) identified 18 critical success factors in construction industry in South Africa and grouped according to four COMs model: comfort, competence, communication and commitment. The findings suggest that both project managers and contractors strongly support the critical success factors as significant in achieving project success. The findings also show no significant differences between project managers and contractors on the biographical variables of gender, age, tenure in the industry and sector (public and private), and their perceptions of critical success factors. But it was noted that the sample included only independent project managers and contractors. It was not given who represented the contractor. However, consultants and project management staff have been excluded from the sample.

Gunathilaka et al. (2013) presented a conceptual paper. 21 CSFs and 9 PSCs were identified. Further they stress that significantly less attention has concentrated on investigating relative importance of PSF. Accordingly, PSFs and PSC are much talked about and written about, however their relative importance and relationships are hardly backed by empirical evidence. Further they conclude that the interest appear to be in identifying PSFs and PSC, rather than identifying which are important and in what ways or how PSFs actually influence PSC and to what degree.

Gudienė et al. (2013) presented a conceptual model with 71 factors for construction projects in Lithuania. It has described 7 major groups of factors. 20 factors causing the failure of construction projects in Vietnam were identified by Nguyen & Chileshe (2013) through a research and out of them top-ten factors were classified into 4 categories. This research established that, despite the all-round renovation process undertaken in Vietnam, the construction industry is still plagued by the same critical factors as identified from eight studies spanning a period of eight years from 2004-2012. The major critical factors were associated with knowledge and technical issues. Moreover, the result obviously proves that the biggest problem leading Vietnam construction projects to failure are issues associated to project management elements. They have gone beyond other researches mentioned above in term of composite (lecturers of universities, managers, consultants, designers and site supervisors) however their sample size was relatively small to represent variance of perceptions.

Alias et al. (2014) identified 5 variables of project performance through a literature review and it has specifically focused on project execution phase.

Zidane et al. (2015) identified 9 delay factors in the Norwegian construction industry through a qualitative study but with a fairly large sample. “Management and coordination”, “quality issues and errors”, “administration and bureaucracy”, “decision issues” and “waiting” were the top five delay factors. The first two were important to all parties, the other three were more important for contractors and subcontractors, less to the clients and sponsors. Project success factors identified by different researchers mentioned above could be grouped into two broader types/categories from contractors’ point of view. They are; success factors on which contractor has no or has the least control/influence and success factors on which contractor has full or a considerable level of control/influence. 40 success factors on which contractor has no or has the least control/influence are presented in Table 1. These factors include client and consultant related factors, construction industry related factors, political, economic, legal and social environment related factors etc. 34 success factors on which contractor has full or a considerable level of control/influence were identified and presented.

Solomon (2015), major resource base in construction management may not directly fall under the project manager (in most cases of outsourced works), having a competent and

capable resource base and mobilization of same to efficiently execute processes is crucially important for the success of the project. Indeed, studies show the availability and synchronized performance of the resource base is one of the major Critical Success Factors (CSFs) in construction projects.

2.9 Conceptual framework

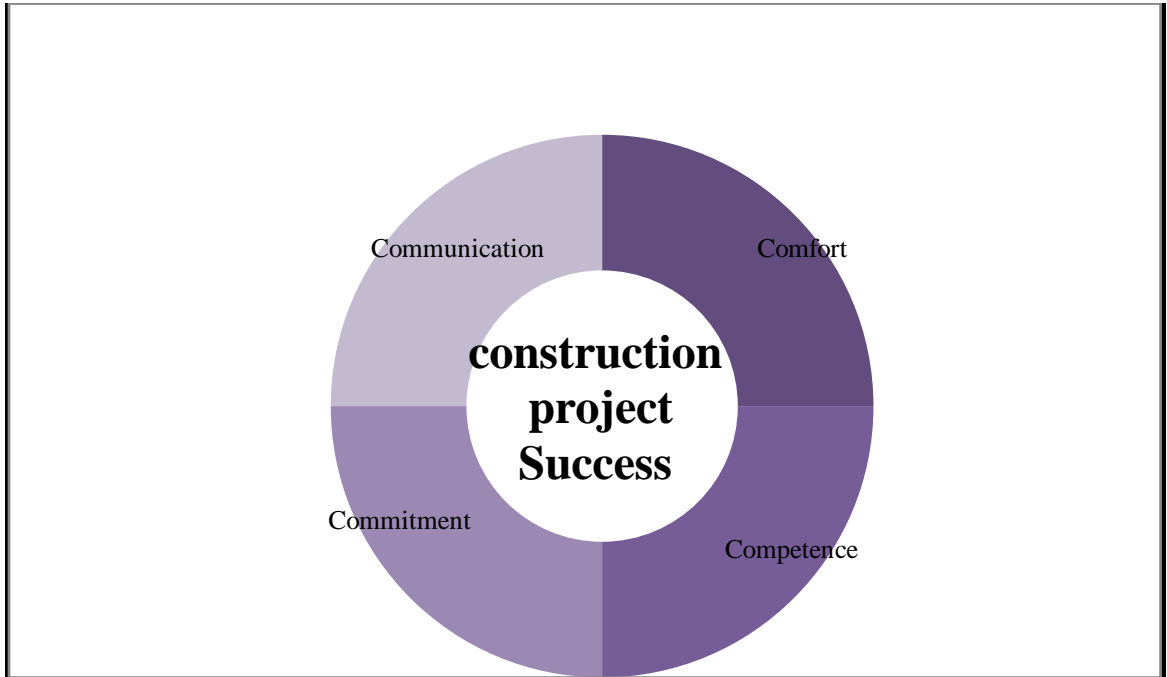


Figure 2.5 Conceptual Framework of CSFs of construction projects (compiled by the researcher)

CHAPTER THREE

Research Methodology

3.1 Introduction

This chapter deals with the methodology used in collecting and analyzing data in this study. An in-depth account on how data was collected and the research instruments utilized will be given. Special focus will be given to the target population, data collection, questionnaire design, data analysis and the justification of the approaches used.

3.2 Research Design

The research needs to assess critical success factors in construction projects of ESLSE. Hence, Descriptive and exploratory research method was found appropriate for this study. Descriptive studies are based on some previous understanding of the nature of the research problem (Saunders, Lewis and Thornhill, 2007: 134). Since the research is assessing the CSFs of ESLSE active construction projects, to assess is to describe the results found from the respondents.

3.3 Study Type

This research is a quantitative study and assesses critical success factors of construction projects in ESLSE active construction projects. Descriptive research will describe the responses of construction executors within the ESLSE on the questionnaires. Descriptive studies are based on some previous understanding of the nature of the research problem (Saunders, Lewis and Thornhill, 2007: 134). In this study, they will be used to assess the critical success factors from the perspective of the response of project managers, contractors and other stakeholders; engineers, site supervisors, and foremen, perceive critical success factors.

3.4 Target Population and sample size

The population and the sample are the same. Because, this is a census study consisting of four target populations; project managers, contractors , engineers, site supervisors, and foremen. According to Blumberg, Cooper and Schindler (2008: 245), a census study

ensures that data is collected from all the elements in the population. The target populations of N1=7, N2=80, N3=7 and N4=40 were obtained from ESLSE profile. According to Lee and Lings (2008: 269), the target population is the population which the researcher would ideally like to generalize the results. The cluster nature of the projects at Modjo makes them easily available, despite its distance.

3.5 Data collection

As this is a quantitative study, the survey method will be used to gather primary data (Easterby-Smith, Thorpe and Jackson, 2008: 11). Data collection forms an important part of a problem solving process to clarify the purpose of any research (Pellissier, 2007: 24). The organization wrote me a letter to cooperate me to disseminate questionnaires. I personally disseminate and collect them. For ambiguities expected, I clarified first on that would face while filling the questionnaire.

3.6 Questionnaire design

The questionnaires were divided into two sections, namely: the demographic section and success factors. The demographic section was included in order to assess whether data collected was not influenced by the individual differences such as gender, age, years in the industry, sector of industry, type and value of projects undertaken. The success factors section was made up of close-ended questions with five possible responses. Close-ended questions were preferred as they reduce the respondent's bias and facilitated coding of the questionnaire (Akintoye and Main, 33 2007: 597-617). An open-ended question was included at the end to allow the respondent to add any factor or views.

3.7 Data analysis

Data was analyzed using the SPSS Package. The descriptive type of statistical analyses was conducted. Descriptive statistics describe the phenomena of interest (Saunders, Lewis and Thornhill, 2007: 134). The following types of descriptive statistics were used:

a) Frequencies and percentages to obtain a demographic profile of the contractor, project manager and others; and

b) Measures of Central Tendency and Dispersion. These were calculated to obtain a “feel for the data”. The mean as well as the standard deviation were utilized. The mean was

used to ascertain the subjects' perceptions of the dimensions of the critical success factors and the standard deviation determined the extent of variation in the subjects' response of the dimensions of the critical success factors for both groups, respectively.

3.8 Reliability and validity

Reliability ensures that internal consistency amongst factors exists (Parasuraman, Grewal and Krishnan, 2007). This questionnaire used in this study was adapted from T Msani study (Nguyen, Ogunlana and Lan, 2004). The computed value of Cronbach's alpha for the success factor was 0.885 which implies that, as authors agree, the data is suitable for further analysis (Wanjari S., & Dobajiya, 2016). Therefore, the Cronbach reliability coefficient for this study is acceptable. Validity ensures that the tool (questionnaire) used is appropriate for the study undertaken (Leedy and Ormrod, 2006).

3.9. Ethical consideration

For the confidentiality of the data to be given by respondents, no need to write their name and assured the anonymity and confidentiality of their response. The purpose of the study was disclosed in the introductory part of the questionnaire. Furthermore, the researcher has tried to avoid misleading or deceptive statements in the questionnaire and they filled the questionnaires on their consent only. Lastly, all research works that have contributed in any way to this study are properly acknowledged and appreciated.

CHAPTER FOUR

Data Presentation and Analysis of Findings

4.1 Introduction

Chapter three outlined the methodology for this research. This chapter discusses in detail the findings of this study. The various sections of the questionnaire are analyzed in detail and accompanied by numerical tabulations. The chapter essentially discusses the themes obtained from the questionnaires.

The questionnaire was formulated with consideration to the critical success factors, as highlighted in chapter two (in the literature review section). These factors make up the eighteen questions in section B of the questionnaire and are encapsulated in the four COMs model. The demographic profile of respondents is discussed in detail with the use of frequency distribution tables. A descriptive analysis of 5 project managers, 7 clients and 71 engineers of various streams both on the client and contractor sides, 38 site supervisors and foremen.

The analysis covered is quantitative in nature. It was interesting to note that biographical variables did not have a significant influence of the perception of project managers and contractors towards the critical success factors. Biographical variables consisted of age groups ranging from 20-23 to 60 and above, tenure, and value of projects undertaken. It was also disturbing to note the percentage of women in the construction industry is still small in all groups.

4.2 Discussion on Demographic profiles of respondents

The demographic profiles of respondents were computed with a view to ascertain whether the construction industry is representative of the country's affirmative policy. The result of the spread in demographics of the respondents is illustrated in Table 4.1 below.

Demographic variables	Scale	Role in the projects									
		Project manager		Engineers of various streams		Client		Others		Total	
		N	%	N	%	N	%	N	%	N	%
Gender	Male	5	4.1%	65	53.7%	7	5.8%	33	27.3%	110	90.9%
	Female			6	5.0%			5	4.1%	11	9.1%
Age	20 to 39	5	4.1%	66	54.5%	7	5.8%	28	23.1%	106	87.6%
	40 to 59			5	4.1%			10	8.3%	15	12.4%
	60 and+										
Experience in the projects (years)	60 and +	5	4.1%	57	47.1%	7	5.8%	28	23.1%	97	80.17%
	5 to10			9	7.4%			10	8.3%	19	15.7%
	10 and +			5	4.1%					5	4.13%
Sheds	Yes	5	4.1%	5	4.1%	2	1.7%	3	2.5%	15	12.39%
	No			66	54.5%	5	4.1%	35	28.9%	106	87.6%
Building	Yes	5	4.1%	52	43.0%	5	4.1%	20	16.5%	82	67.76%
	No			19	15.7%	2	1.7%	18	14.9%	39	32.24%
Other	Yes	5	4.1%	14	11.6%	2	1.7%	8	6.6%	29	23.97 %
	No			57	47.1%	5	4.1%	30	24.8%	92	76.03%
Terminal	Yes	5	4.1%	15	12.4%	2	1.7%	13	10.7%	35	28.92%
	No			56	46.3%	5	4.1%	25	20.7%	86	71.08%
Contract amount in millions	Up to 1										
	Up to 5										
	Up to 15										
	Up to 50							10	8.3%	10	8.3%
	Up to 100			10	8.3%			10	8.3%	20	16.5%
	500 and +	5	4.1%	61	50.4%	7	5.8%	18	14.9%	91	75.20%

Table 4.1 Demographic Profiles of Respondents

The results in Table 4.1 reflect the frequency distribution of the biographical variables for project managers (PMs), Engineers, clients, others; foremen and site supervisors. All PMs are male. The ESLSE projects seem concentration camps for males. However, there are 5% of females from the engineers and 4.1% foremen and site supervisors as compared to the total population. The whole PMs were in the 20-39 age groups, five years or less experience in ESLSE construction projects, worked in all types of construction projects mentioned in the questionnaire they responded, and lead projects of high budget which are more than 500 million worth. From the whole 91.7% of the project workers has worked in projects worth of 100 million and more. The project staffs are 80.17% in the 5 and less years experience range. Women's whole participation is 9.1 % of the total respondents. This finding clearly shows that a lot of effort needs to be directed towards encouraging women to participate in the construction industry. ESLSE and other bodies like governmental and nongovernmental should work in collaboration with Ministry of Works and Urban Development of Ethiopia to help women join the industry of construction projects and contribute to the economy.

The whole of the project managers were working for 5 years or less. This is due to the fact that projects are not comfortable for PMs and as a result high turnover is common, especially due to lack of proper authority that is applicable without unnecessary interference of the client.

4.3 Discussion of the four COMs

The discussion of the COMs as the four groups of critical success factors for the construction projects of ESLSE are given in the following sections.

4.3.1 Comfort

This component emphasizes that projects are executed in comfort when components such as competent project managers, continuous involvement of stakeholders, availability of resources, funding and comprehensive contract documentation are fulfilled. The frequency distribution of questions is illustrated in Table 4.2.

Table 4.2 Response of Respondents to Comfort

Attributes	Scales	Group							
		Project manager		Engineers of various streams		Client		Others	
		N	%	N	%	n	%	N	%
Proper emphasis on past experience Q6	Strongly disagree								
	Disagree			10	8.3%				
	Neutral	1	0.8%			2	1.7%	18	14.9%
	Agree	2	1.7%	30	24.8%	5	4.1%	20	16.5%
	Strongly agree	2	1.7%	31	25.6%				
Awarding bids to the right project manager/contractor Q7	Strongly disagree			10	8.3%				
	Disagree								
	Neutral			15	12.4%			15	12.4%
	Agree	5	4.1%	21	17.4%	2	1.7%	18	14.9%
	Strongly agree			25	20.7%	5	4.1%	5	4.1%
Up-to-date technology utilization Q8	Strongly disagree								
	Disagree			5	4.1%	2	1.7%	8	6.6%
	Neutral			10	8.3%			15	12.4%
	Agree			32	26.4%	5	4.1%	10	8.3%
	Strongly agree	5	4.1%	24	19.8%			5	4.1%
Multidisciplinary/competent project team Q9	Strongly disagree			5	4.1%	2	1.7%	3	2.5%
	Disagree							5	4.1%
	Neutral			20	16.5%	3	2.5%	17	14.0%
	Agree			11	9.1%	2	1.7%	8	6.6%
	Strongly agree	5	4.1%	35	28.9%			5	4.1%

The frequency distribution in Table 4.2 shows that except 5(4.1%) engineer respondents, who disagree on Q1, the rest agree on the significance of all success factors from Q1 to Q5. PMs have similar perception except on Q2 which shows some agree slightly and the others feel contract documentation is very significant to project success. Thus, 61.9% to 75.2% of the total respondents agree as very significant and extremely significant critical success factors for the successful implementation of construction projects.

4.3.2 Competence

This component emphasizes that adequate competences should be available for the smooth execution of construction projects. The frequency distribution of all the questions relating to competence is illustrated in Table 4. 3.

Table 4.3. Response of Respondents to Competence

Attributes	scales	Group							
		Project manager		Engineers of various streams		Client		Others	
		N	%	N	%	N	%	N	%
Proper emphasis on past experience Q6	Strongly disagree								
	Disagree			10	8.3%				
	Neutral	1	0.8%			2	1.7%	18	14.9%
	Agree	2	1.7%	30	24.8%	5	4.1%	20	16.5%
	Strongly agree	2	1.7%	31	25.6%				
Awarding bids to the right project manager/contractor Q7	Strongly disagree			10	8.3%				
	Disagree								
	Neutral			15	12.4%			15	12.4%
	Agree	5	4.1%	21	17.4%	2	1.7%	18	14.9%
	Strongly agree			25	20.7%	5	4.1%	5	4.1%
Up-to-date technology utilization Q8	Strongly disagree								
	Disagree			5	4.1%	2	1.7%	8	6.6%
	Neutral			10	8.3%			15	12.4%
	Agree			32	26.4%	5	4.1%	10	8.3%
	Strongly agree	5	4.1%	24	19.8%			5	4.1%
Multidisciplinary/competent project team Q9	Strongly disagree			5	4.1%	2	1.7%	3	2.5%
	Disagree							5	4.1%
	Neutral			20	16.5%	3	2.5%	17	14.0%
	Agree			11	9.1%	2	1.7%	8	6.6%
	Strongly agree	5	4.1%	35	28.9%			5	4.1%

The frequency distribution in Table 4.3 shows that 16.7% of respondents gave a “disagree” response to Q7 and Q9. On the other hand, 58.6% to 71.3% of respondents gave a “very significant and “extremely significant” response to questions to all questions. Thus, the majority of respondents identify these components as critical success factors for the successful implementation of construction projects. But, the number of respondents is not as expected. Finding some project employees who disregards the significance of awarding bids to the right project manager or contractor and having the competent project team is uncommon.

4.3.3 Commitment

This component of the four COMs model emphasizes that all relevant stakeholders must display strong commitment throughout the entire project life cycle. The frequency distribution of the questions relating to commitment is illustrated in Table 4.4
Response of Respondent to Commitment

Attributes	scales	Role in the projects							
		Project manager		Engineers of various streams		Client		others	
		N	%	N	%	N	%	N	%
Top management support Q10	Strongly disagree			5	4.1%				
	Disagree					3	2.5%	7	5.8%
	Neutral			10	8.3%	4	3.3%	11	9.1%
	Agree			21	17.4%			10	8.3%
	Strongly agree	5	4.1%	35	28.9%			10	8.3%
Clear objectives Q11	Strongly disagree								
	Disagree			5	4.1%	2	1.7%	8	6.6%
	Neutral	2	1.7%	21	17.4%	5	4.1%	10	8.3%
	Agree	1	0.8%	10	8.3%			20	16.5%
	Strongly agree	2	1.7%	35	28.9%				
Commitment to the project Q12	Strongly disagree			5	4.1%				
	Disagree			5	4.1%	5	4.1%	5	4.1%
	Neutral							15	12.4%
	Agree	5	4.1%	16	13.2%	2	1.7%	18	14.9%
	Strongly agree			45	37.2%				
Political support Q13	Strongly disagree			16	13.2%	2	1.7%	8	6.6%
	Disagree			10	8.3%	3	2.5%	12	9.9%
	Neutral			30	24.8%	2	1.7%	3	2.5%
	Agree			5	4.1%			15	12.4%
	Strongly agree	5	4.1%	10	8.3%				

The frequency distribution in Table 4.4 shows that 21.5% of respondents gave a “not significant” response to Q13. The reliance on the political commitment as a critical factor for the success of projects is questionable. This may be for two reasons. The first being the projects are not public projects; hence the interference of the politics is not significant. And secondly the perception of the respondents on the political system of the country is bad. On the other hand, 71.2% of respondents gave a “very significant” and “extremely significant” response to Q12. But, unlike other COMs, many respondents deny these components as critical success factors for the successful implementation of construction projects. Very few respondents mentioned corruption as a factor that should be included in the CSFs. In other words this issue is raised in the commitment part of CSFs. Political commitments at country level and commitment to project at organization level is stated that may halt the prevalence of corruption.4.3.4

4.3.4 Communication

This component highlights the importance of having strong communication ties with relevant stakeholders for the successful implementation of construction projects. The frequency distribution of the questions relating to commitment is illustrated in Table 4.5.

Table 4.5 Response of Respondents to Communication

Attributes	scales	Role in the projects							
		Project manager		Engineers of various streams		Client		Others	
		N	%	N	%	N	%	N	%
Frequent progress meetings Q14	Strongly disagree			5	4.1%	3	2.5%	2	1.7%
	Disagree			5	4.1%	2	1.7%	3	2.5%
	Neutral	2	1.7%	15	12.4%			10	8.3%
	Agree	2	1.7%	25	20.7%	2	1.7%	18	14.9%
	Strongly agree	1	0.8%	21	17.4%			5	4.1%
Project plans updated regularly Q15	Strongly disagree					3	2.5%	2	1.7%
	Disagree			5	4.1%	2	1.7%	3	2.5%
	Neutral			10	8.3%			10	8.3%
	Agree	3	2.5%	21	17.4%	2	1.7%	18	14.9%
	Strongly agree	2	1.7%	35	28.9%			5	4.1%
Community involvement Q16	Strongly disagree			10	8.3%	5	4.1%	5	4.1%
	Disagree			5	4.1%			10	8.3%
	Neutral	1	0.8%	31	25.6%	2	1.7%	13	10.7%
	Agree	1	0.8%	11	9.1%				
	Strongly agree	3	2.5%	14	11.6%			10	8.3%
Shared project vision Q17	Strongly disagree								
	Disagree			5	4.1%	5	4.1%	15	12.4%
	Neutral			16	13.2%	2	1.7%	8	6.6%
	Agree	2	1.7%	26	21.5%			15	12.4%
	Strongly agree	3	2.5%	24	19.8%				
Handover procedures Q18	Strongly disagree			5	4.1%	3	2.5%	2	1.7%
	Disagree					2	1.7%	3	2.5%
	Neutral	2	1.7%	11	9.1%			5	4.1%
	Agree	2	1.7%	25	20.7%	2	1.7%	23	19.0%
	Strongly agree	1	0.8%	30	24.8%			5	4.1%

The frequency distribution in Table 4.5 shows that only 32.3% of respondents gave a “very significant” and “extremely significant” response on Q16. On the other hand, 72.8% of respondents gave a “very significant” and “extremely significant” response to Q18. Thus, we can see the lack of uniformity of respondents in identifying these components as critical success factors for the successful implementation of construction projects. From the respondents response we can observe that meetings are considered fruitless except losing working time. Having shared vision is also perceived not critical. The employees seem to work simply the task assigned whatever it is.

4.3.5 The four COMs in one

For detail discussion of the four critical success factors it is tiresome and unnecessary to submit the detail mean and standard deviation of the eighteen sub CSFs. The following table 4.6 shows the mean and standard deviation of the four CSFs calculated from 121 respondents over 18 questionnaires using SPSS.

Table 4.6 mean and standard deviation of the four COMs

CSFs	Mean	Std. Deviation	N
comfort	4.0298	.77273	121
competence	3.8161	.84826	121
commitment	3.5785	.92985	121
communication	3.5967	.90994	121

The table 4.6 shows the presence of undeniable difference between the mean of different CSFs and high but acceptable range of standard deviation. On the preceding discussion what is observed is similar to this. The mean of responses between different role players is not the same. Demographic factors impose on this. The additive effect of different responses to questionnaires of different sub CSFs is shown here on the cumulative one.

The response shows the inconsistency of respondents over the four CSFs. The response given to Comfort is far better than response to commitment. This shows the company is not in a consistent manner to assess, determine and manage CSFs.

CHAPTER FIVE

Summary of findings, Conclusion and Recommendations

The preceding chapter presented the results and discussion, while this chapter deals with summary, conclusion and recommendations based on the findings of the study. Accordingly this, chapter is organized into three subsections.

5.1 Summary of findings

The aim of the research was to assess the critical success factors in construction projects being a case study in ESLSE construction projects. The projects are seven active construction projects found in Addis Ababa and Modjo cities. To get the data primary data is used through questionnaires distributed to 121 respondents. The respondents are composed of project managers, clients, engineers of various streams, site supervisors and foremen. This study has managed to assess critical success factors in construction projects of ESLSE. It should be noted that assessing these critical success factors requires the honest co-operation of the respondents in ESLSE seven active construction projects.

The result found from the respondents are analyzed using descriptive method using the SPSS software. The frequency, the mean and the standard deviation shows that there is difference while calculating it in comparison with the demographic factors. The response based on gender, age, role and other demographic factors show undeniable difference.

The standard deviation also shows a big dispersion even though it is in the acceptable range, which is less than 1. This shows that the understanding about critical success factors among primary project stakeholders is not same. More over there is still undeniable difference of mean and standard deviation between different critical success factors. The primary stakeholders of ESLSE have different response for different CSFs that show varied mean and unacceptable standard deviation.

5.2 Conclusion

The study specifically examines the assessment of critical success factors based on the following conclusions.

- The mean of comfort is found to be the greatest of all factors. This shows that the stakeholders' response of ESLSE on this CSF and four sub CSFs is higher and at the same time the standard deviation is the lowest. When the project is comfortable, it shows the belief of the stakeholders to succeed. Under this CSF continuous funding and availability of resources are included. Perhaps the respondents might think availability of the financial and other resources is the most demanding prerequisite or CSF for project success.
- The response collected on competence shows the next higher mean next to comfort and the next lower standard deviation. From this result we can conclude that being competent is highly appreciated next to comfort in ESLSE construction projects.
- Commitment shows the lowest mean and the highest standard deviation in ESLSE construction projects. The respondents' reliance on commitment is the weakest. The sub CSFs are like political commitment, project commitment and top management support. The primary stakeholders seem in lack of trust these external but big influencers and the top management.
- Communication is equally important in any hierarchy of management. But, here we concluded from the research that the respondents put it on the third stage to other CSFs in the study. The standard deviation is also the second highest. Communication is necessary to make the project at comfort, committed and competent.

In general, the construction projects of ESLSE shows disintegrated response on the questionnaires between different role players and same role players but different CSFs. Fulfilling a single requirement in CSFs is not enough. A company or project failing to fulfill the last single CSF may hinder the performance of the construction projects of ESLSE.

5. 3 Recommendation

The assessment on the critical success factors showed that there is undeniable difference between respondents on CSFs of ESLSE construction projects. A small percentage of respondents gave corruption as an additional factor which they viewed as critical impediment for the successful execution of projects. Corruption is concluded in the commitment part in different forms. Based on the findings the researcher draws the following recommendations.

- ESLSE construction project office and the organization in collaboration with the contractors should identify the CSFs of their construction projects so as to succeed in construction projects. Teclé and Mahelet (2009:46-47), states as follows “On virtually all building contracts of any magnitude, the role of the contractor is to sue his management know-how not only to procure the requisite skills but also to know whether and to what extent they are being provided adequately to meet the requirements of the contract.” Identifying critical success factors can decrease cost and increase efficiency in managing projects and make successful. Special attention should be given for CSFs; commitment and communication.
- The primary stakeholders of the company, the consultant office and the contractors should have trainings on the theoretical project management. What we understand while filling the questionnaire showed me that there is gap of theoretical knowledge. Especially, engineers who have ample experience on the practical field work could be advantageous if they are supported by this.
- From the finding we understood that ESLSE projects have different efficiency on the four CSFs. The mean of response between different critical success factors and the responses between different role players shows a big deal of difference. ESLSE with contractor companies and consultants should work on balancing these differences by identifying the CSFs, introduce them to the primary stakeholders in the proper channel and frequency, and prepare tools to implement so as to achieve project success on construction projects.
- The ESLSE should focus on issues that seem trivial but is useful. The participation of women is considerably low. The company might have missed the

service of qualified females in the employment market. Corruption, as stated by the respondents should be well managed using different approaches.

Therefore, ESLSE should consider the abovementioned recommendations and assess the status the company is at considering CSFs.

5.4 Direction for future research

This research is limited to assessment of CSFs of active construction projects of ESLSE; a government owned and lonely company in the sea transport sector in Ethiopia. Being the first research concerning CSFs of its construction projects, further researches are necessary to fulfill the limitations of this research and touch related but not included topics. Here are the recommended topics;

- Explanatory research on Critical success factors of the construction projects against success.
- Assessment on maturity model of ESLSE using different tools so as to know the status the whether the company is capable of handling construction projects successfully or not
- Assessment Study on critical project management practices of ESLSE.

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Appendix 1

Appendix One: Letter of consent

Dear Respondent

I am studying towards my Master of Art in Project Management at Addis Ababa University College of commerce. The title of my research project is Assessment of Critical Success Factors influencing Project Success in ESLSE Construction projects. I would appreciate your co-operation in completing this questionnaire.

I want to thank you in advance for your time. Please be assured that your identity will remain anonymous and your responses will be kept confidential.

Participation in this research study is voluntary.

Your participation in this research is greatly appreciated.

Yours faithfully

Ayinetaw AlemDegu

Section A: Demographics

1. Please indicate your gender by making a cross in the appropriate box.

Male	
Female	

2. Please indicate your age by making a cross in the appropriate box.

20 to 39	
40 to 59	
60 and above	

3. Indicate the number of years involved in the ESLSE construction projects.

Less than or equal to 5 years	
Between 5 years and 10 years	
10 years or more	

4. In most projects you have worked as:

Project Manager	
Contractor	
Client	
Other...	

6. Please classify the type of projects you have mostly undertaken.

Building	
Sheds	
Terminal	
Other (specify...)	

6. Most of the projects undertaken were valued:

Up to 1 000 000	
Up to 5 000 000	
Up to 15 000 000	
Up to 50 000 000	
Up to 100 000 000	
Up to 500 000 000 or more	

Section B: Success factors

Please use the rating in the following table to answer all the statements below.

1	STRONGLY DISAGREE
2	DISAGREE
3	NEUTRAL
4	AGREE
5	STRONGLY AGREE

Kindly indicate (cross) the degree of application of the following factors that you deem necessary for the successful execution of your projects.

Questionnaire		Responses				
comfort	Continuing involvement in projects of all stakeholders					
	Comprehensive contract documentation					
	Availability of resources					
	Adequate funding until project completion					
	Competent project manager					

competence	Proper emphasis on past experience						
	Awarding bids to the right project manager/contractor						
	Up-to-date technology utilization						
	Multidisciplinary/competent project team						
Commitment	Top management support						
	Clear objectives						
	Commitment to the project						
	Political support						
Communication	Frequent progress meetings						
	Project plans updated regularly						
	Community involvement						
	Shared project vision						
	Handover procedures						

19. Other factors please specify:

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Thank you for participating in this research project.

Appendix 2

No	Name of Project	Contract/consultant	Date of Commencement	Contract Completion Date	Contract Amount(Inc. Variation)/Birr	Accomplished to date (%)
1	Terminal Phase 2	Ethiopian construction works corporation water infrastructure center	20Oct/12	3Mar/14	643,697,121.28	96.93
2	Terminal Phase 3	Ethiopian construction works corporation water infrastructure center	13May/14	18Mar/16	501,479,994.41	83.46
3	Garage and work-shop	Genale construction PLC	26Jul/16	13Mar/18	28,371,610.86	60.97
4	Modjo G+5 building	Yotek Construction PLC	28Jul/16	4Sep/18	302,973,415.60	23.78
5	Mega Warehouse 3 and 4	Mescon construction PLC	For WH3 29 Oct/2015 For WH4 04 Jan/2016	10Oct/17	179,491,676.16	98.49
6	Multi-purpose building	Tekleberhan Ambaye construction PLC	21-Sep -15	12Nov/17	490,718,672.82	52.25
7	Modjo dry port railway link and other infrastructures	CREC	-	-	USD 37,471,177.71 (Excluding VAT)	-

The Project Status Report as of 25/04/2018

N.B all projects are at Modjo except a project in Addis Ababa stated on number 6.

