ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

ASSESSMENT OF CONSTRUCTION PROJECTS CONTRACTORS' PERFORMANCE IN CASE OF ETHIOPIAN AIRLINES

BY

SABA DESTA GEBREMESKEL

June, 2019

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Id No: SGS/0413/2010A

THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION IN PROJECT MANAGEMNT

June, 2019
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Assessment of contractor's performance in construction projects in case of Ethiopian airlines.

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Acknowledgement

I am deeply indebted to my advisor Dr. Abebaw Kassie whom during this period has kept me on track, and also provided me invaluable professional advice and encouragement for the completion of this thesis work.

I would also like to thank God for making this possible. I feel blessed and protected in every step I take towards any achievement.

I am deeply grateful to my family and friends for encouraging and supporting me to finish the research. Ayda, you are the best sister I could ever ask for, thanks for always being there. Mamaye this is the result of your support and motivation, thank you for raising me the way you did, you are wonderful role model. Thank you my family again for always believing in me.

Kind gratitude and sincere acknowledgment to respondents who supported me by providing valuable information during this research study and Ethiopian airlines engineering and facility planning team.

Thank you

Saba Desta

Acronyms

CCPM	Critical Chain Project Management
EAL	Ethiopian Airlines
EAA	Ethiopian Aviation Academy
EAE	Ethiopian Airport Enterprise
ET	Ethiopian
HR	Human Resource
PMBOK	Project Management Body of Knowledge
RII	Relative Importance Index
WBS	Work Breakdown Structure

Contents

Abstract

Assessment of Construction projects contractors' performance will have potential benefits for increased productivity, efficiency, improved project predictability, increased stakeholder's confidence, improved communication, and increased probability of project success. Proper management of construction projects contractors' performance can help project success with standard quality, productivity and expectations However, in most cases Ethiopian Airlines construction Projects contractors performance do not seem productive and some face quality and delay problems. The objective of this paper is to identify the factors which affect construction projects contractors' performance. The study employed descriptive research design using primary and secondary data. The data for this study was obtained through questionnaires, and the survey questions were distributed to 45, Contractor and 15 Consultant professionals working on Ethiopian Airlines construction projects. The respondents were selected using stratified sampling techniques. The responses were analyzed and interpreted using SPSS analytical tools. The results of the study indicated that different factors such as cost, time, people etc. affect performance of a construction projects contractor. The conclusion drawn is the usage of schedule management tools and techniques is low level. Based on the findings it is recommended that construction projects contractors address the constraints to make use of customized schedule management tools and techniques. The results of the study will help Ethiopian Airlines construction projects to improve their level of using Project schedule management tools and techniques and the study lays foundation for further researches.

***Key words**: Ethiopia, Ethiopian Airlines, SPSS analytical tools*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The construction industry is the sector involved with erection, repair and demolition of buildings and civil engineering structures in an economy. A definition typical of national income accounts in use in most advanced industrialized countries is as follows: the construction industry entails "the assembly of building materials and/or components on site; the materials and components are supplied by a variety of industries in the manufacturing sector; they are delivered to the site by the transportation and trade sectors; the assembly proceeds in accordance with plans, designs, and management procedures

Construction industry plays a major role in development and achievement the goals of society. Construction is one of the largest industries and contributes to about 10% of the gross national product (GNP), Azeb (2016). In industrialized countries Construction industry has complexity in its nature because it contains large number of parties as clients, contractors, consultants, stakeholders, shareholders and regulators. The performance of the construction industry is affected by national economies. Output from the construction industry is a major and integral part of the national output, accounting for a sizeable proportion in the Gross Domestic Product (GDP) of both developed and underdeveloped countries.

A contract is a legally binding agreement between two or more parties to exchange something of value. **(***wikipedia.org)* Construction is considered one of the industries on which national prosperity depends. A Contractor is employed by a client to fulfill a contract and finish a project within a certain time.

The goal of all parties (owners, consultants, contractors, subcontractors and suppliers) involved in construction projects in either the public or private is to successfully complete the project on schedule, within planned budget, with the highest quality and in the safest manner Sometimes, however, construction projects require resources that contractors are unable to provide; in such cases, subcontractors are used. Thus, one of the main factors in contractor performance is how the contractor cooperates with subcontractors as competition in the construction industry is increasing daily, every organization must measure its performance.

The measurement of performance has become the language of progress of an organization, no improvement in any business can be gained unless we measure its performance, defined performance measurement is the process of quantification and past actions determine current performance. In the construction process, we need to measure contractor's performance and the factors affecting it.

Project performance can be investigated and evaluated using a large number of performance indicators, expressed by factors such as time, cost, quality, client satisfaction, client changes, and health and safety. Many studies have investigated the project performance factors that impact contractor performance in developing countries. Shortages of manpower skills, poor supervision and site management, unsuitable leadership, and equipment failure have all contributed to construction delays in addition to this it has great negative impact on the contractor's performance, Azeb (2016). The concern of this study is to identify the factors which affect contractor's performance in case of Ethiopian airlines and try to provide possible solutions for the problems together with the contractors.

1.2 Statement of the Problem

The responsibility of achieving success in the implementation of a construction project largely depends on the contractor's performance Azeb (2016). However, it has become a common trend that contractors are not performing to expectations of the clients that they serve and indeed many road contractors have failed in performance. Delays in project completion and poor performance in the construction industry has been experienced and has led to failure in achieving effective time and cost performance.(Azeb ,2016).

The performance of the participants involved and the product output is dependent on the promptness and regularity of payment. It is observed that delay is a common occurrence particularly where the government projects are concerned.

Three of the most critical factors noted are fluctuation in cost of materials, cash flow and financial difficulties faced by contractors, poor site management and supervision Alarcon (1994).

Failure to pay in the construction industry may be put in three categories; delay in paying one or more certificates, reduction in value of certificates or invoices, and not paying at all.

The major causes of failures were insufficient implementing capacity, poor project management, weak project design and political interference. (Ejaz et al., 2013).

Therefore, factors influencing performance of contractors are very critical to any construction project. So far different studies have been conducted in Ethiopia regarding contractor's performance specially on road projects but it is first time study in case of Ethiopian airlines projects, the reason behind is this days contractors are not performing well as per their agreement and promise and their poor performance has great impact on the aviation industry and also it is creating a big burden on the maintenance sections, so this study aims to address factors affecting contractors performance in case of Ethiopian airlines and minimizing this problems together with contractors.

Thus, this study aims to bridge this knowledgeable gap by evaluating factors influencing Performance of contractors in the construction sector: case of prequalified contractors (selected contractors) in case Ethiopian airlines.

1.3 Research Questions

The study is going to be guided by the following questions;

1) Is a cost factor on the performance of contractors in Ethiopian Airlines?
2) Is time factor on the performance of contractors in Ethiopian airlines?
3) Is productivity factor on the performance of contractors at Ethiopian airlines?
4) Does Client have impact on the performance of contractors at Ethiopian airlines?
5) Do people have impact on contractor's performance at Ethiopian airlines?
6) Which factors are the most influential ones for affecting the contractor's performance in the construction projects

1.4 Research Objectives

1.4.1 General Objective

The overall aim of this study is to identify the factors which affect contractor's performance in the construction projects in case of Ethiopian airlines.

1.4.2 Specific Objective

The study is based on the following objectives;

1) To assess the influence of project time on the performance of contractors at Ethiopian Airlines Constructions.
2) To assess the influence of project Cost on the performance of contractors at Ethiopian airlines.
3) To assess the influence of project quality on the performance of contractors at Ethiopian airlines.

4) To assess the influence of productivity on the performance of Ethiopian airlines.
5) To assess the influence of client on the construction project contractors performance at Ethiopian airlines
6) To assess the influence of people, factor on the construction project contractor performance at Ethiopian airlines.

1.5 Scope of the Study

1.5.1 Geographic Scope

The study is conducted in Addis Ababa specifically, at Ethiopian Airlines, Engineering and construction works division. Among the various international and domestic stations as well as other divisions of the organization in Addis Ababa, the research will be limited to Engineering and construction works division at head quarter starting from Dec1, 2018 up to May 30, 2019.

1.5.2 Conceptual Scope

The study is limited to assessing the common factors that have influence on construction projects like Quality, cost time, performance etc. affecting the performance of contractor's at Ethiopian airlines engineering and construction works division in relation to effect of contractor's performance in the construction projects in case of Ethiopian airlines.

1.5.3 Methodological Scope

As clearly defined in the problem statement the study will be on factors affecting the performance of contractor's at Ethiopian airlines, one of the main reason why this study is conducted is, Ethiopian airlines is one of the fastest growing and leading airline in Africa because of this a lot of infrastructures, buildings and different technologies are under implementation so that the performance of contractor has huge impact on the growth process. Explanatory research design is employed and both quantitative and qualitative data analysis techniques are used to suit the research objective.

1.6. Significance of the Study

The output of this study could contribute to the understanding of the critical challenges Contractors are facing that inhibit their performance on projects in the construction sector in Ethiopian airlines and other developing countries.

The findings may be used by government to Provide the necessary incentives and regulations to ensure sustainable growth, capacity building and policy framework to regulate the construction industry toward achieving Vision 2025.

The outcome of the study may be useful to the contractors in providing an in-depth perceptive of the factors that inhibit their performance and therefore ensure that they improve in the organization of their finances and employ competent skilled manpower in order to improve on their profitability and reputation.

The study may be useful for construction supervision consultants who may comprehend how their services impact performance of contractors in the construction sector.

The result of the research could be vital to other researches involved in formulation of

Policy and will provide academicians with further data and information of factors

Influencing performance of contractors particularly in the construction sector.

In addition to the above points the study may also make numerous contributions to literature on factors influencing performance of contractors in the construction sector.

1.6 Limitation of the Study

Due to limitation of resources and time the study is limited prequalified contractors in Construction sector in Ethiopian airlines although there are many contractors involved in other Infrastructural projects in the country. This might limit the data that will be collected from the questioner.

1.7 Organization of the Research Report

Structurally, the paper will be composed of four chapters. The first chapter will present introductory materials, which includes background of the study, problem statement, research objective, research questions, and methodologies, significances of the study and the scope and limitations of the study. The second chapter presents the related literatures reviewed during the desk research phase of the study. With this background, the report presents analysis and interpretation of the data gathered in the third chapter. Finally, the report concludes with the summary and conclusion of the study and recommendations that are made.

CHAPTER TWO

LITERATURE REVIEW

Literature review related on assessment of contractor performance in case of Ethiopian airlines.

2.1 Theoretical Review

In the contemporary business relations among contractors, clients as well as consultants have a great impact in the construction industry. Understanding the factors affecting contractor's performance is becoming a necessity, and is being an indispensable condition in order to maintain organizational objective.
Construction projects involve a great deal of time and capital, so effective construction project management skills are required if the projects are to be completed within the established time line to meet cost limitations and quality requirements.

In the construction industry, staying cost effective and competitive means that companies must have core competencies for coordinating the job sites, controlling costs, and managing risk at their construction sites (Sullivan,2013).
This chapter analyses past literature on factors influencing performance in the construction sector with particular focus on factors influencing performance of contractors. Some of the key concepts used in the research are highlighted including some theoretical contributions from literature. A literature review helps in the development of understanding of the previous research that has been done relating to the objectives, aims and helps in the refinement of the ideas to which the research will be built.
The Literature review is obtained from Secondary sources; relevant mega and reports, financial text books, government publications and projects among others.

2.1.1 Definitions of Key words

Working Capital: Financial capability of a contractor to finance construction project in terms of purchase of construction equipment, payment of employees and have adequate credit lines to ensure smooth implementation of the road construction project from own resources.

Contractor: An independent entity that agrees to furnish certain number or quantity of goods, material, equipment, personnel, and/or services that meet or exceed stated requirements or specifications, at a mutually agreed upon price and within a specified time frame to another independent entity called contracted, principal, or project owner.

International Contractors

International contractors are contractors who perform construction works outside their country of origin.

Local contractors

Local contractors are contractors who perform construction works inside their country of origin.

International construction projects

International construction projects are those projects in which the contractor, the lead consultant, or the employer is not of the same residence, and at least one of them is working outside his or her country of origin.

Skilled manpower: Refers to availability of employees with capabilities, knowledge, skills and experience relevant to implementation of road construction projects. Organization Structure: How tasks are divided allocated and coordinated among the individuals in the construction process.

Client support: Refers to government support to the implementation of road construction projects which includes: budget allocation, prompt approvals, stakeholder involvement, payment to contractors, and project organization.

Infrastructure

Infrastructure is the basic physical and organizational structure needed for the operation of a society or enterprise, or the services and facilities necessary for an economy to function. It can be generally defined as the set of interconnected structural elements that provide a framework supporting an entire structure of development. It is an important term for judging a country or region's development.

The term typically refers to the technical structures that support a society, such as roads, bridges, tunnels, water supply, sewers, electrical, telecommunications, and so forth, and can be defined as the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions.

Performance

The accomplishment of a given task measured against preset known standards of accuracy, Completeness, cost, and speeds. In a contract, performance is deemed to be the fulfillment of an obligation, in a manner that releases the performer from all liabilities under the contract.

Performance indicator(s)

A particular value or characteristic used to measure output or outcome. These are parameters useful for determining the degree to which an organization has achieved its goals. A quantifiable expression used to observe and track the status of a process. The operational information that is indicative of the performance or condition of a facility, group of facilities, or site.

Performance management

The use of performance measurement information to help set agreed-upon performance goals, Allocate and prioritize resources, inform managers to either confirm or change current policy or program directions to meet those goals, and report on the success in meeting those goals.

Performance measurement

A process of assessing progress toward achieving predetermined goals, including information on the efficiency with which resources are transformed into goods and services (outputs), the quality of those outputs (how well they are delivered to clients and the extent to which clients are satisfied) and outcomes (the results of a program activity compared to its intended purpose).

Performance of contractor: The accomplishment of a given task measured against preset known standards of accuracy, completeness, cost and speed. In a contract, performance of a contractor is deemed to be fulfillment of an obligation in a manner that releases the contractor from all liabilities under the contract.

2.1.2 Nature of the Construction Industry

In ancient time, construction and architectural wonders were created and are considered now the wonders of the world, such as the pyramids of Egypt, the Great Wall of China, Taj Mahal and also the Eiffel tower in Paris. During the eighties the construction industry expanded and its total annual value around the world was about 1.5 trillion dollars. While during this century the construction activity is revolutionized to include high rise buildings, infrastructure facilities, dams and irrigation works.

The construction industry is dynamic in nature as it changes constantly with the developments of new business methods and technologies. This constant change increases the uncertainties in technology, budgets, and development process. The main characteristics in the construction industry are the complexity of the construction process, the long time period taken by the project to be completed, the involvement and integration of different specialties, the uncertainty and risk involved in the construction industry and also the production of unique projects that is witnessed widely in the past years due to globalization. Thus, construction companies should adopt and develop

appropriate strategies to decrease the uncertainties of facing extraordinary changes, and achieve the highest success percentage in their business.

Construction industry has its own position in the national economy of each country, as it was the main reason of the economic growth of some countries such as United States and China (Elsokhn, 2014).

The high levels of construction activity are usually associated by national prosperity. The importance of the industry is not for its final product only as it provides them with all the essential public infrastructure and private structure; it is also for the employment of large number of people directly and indirectly. Moreover, other industries are activated during the construction process such as to the steel industry, the concrete industry, etc. Thus, the construction industry has a great effect on the economy of the country or a region during the construction process (Elsokhn, 2014).

2.1.3 Concept of Performance

The performance definitions review in this paper articulate the concept in achieving and accomplishing the planned targets. For instance, BNQP (2009) defines performance as "outputs and outcomes from processes, products and services that allow assessment and comparison relative to set goals, standards, past results, and other specifications" "For a long time, performance assessment has remained a problem for the construction industry. Various concepts and measures have been experimented to assess and measure performance of projects. Alarcon (1994) observed that most of these measures inhibit their assessment to preferred standards such as, time, cost or output. Contractors are required to evaluate performance and upgrade strategies to gain competitive advantage. To lift competitiveness, construction firms have to utilize performance evaluation mechanism to ensure sustainable performance.

Rose (1995) observed that performance measurement is the expression of progress. Expansion in business cannot be achieved if its performance is not evaluated, Performance measurement is described by Neely (1998) as the method of evaluating previous activities to ascertain present performance.

Contractor performance is defined as a factor of; time, sustainable development, quality and construction cost, the idea being that the attainment of one facet of performance must not be at the cost of another (Hong & Proverbs, 2003). From the perspective of Poon (2003) the primary gauge of the performance of contractors is the contentment of clients. Poor performance, shown by substandard quality of work and low production, is Widespread in construction projects. Other challenges linked with inadequate performance include; poor work ethics and miscommunication among stakeholders, late completion, cost increase, very high accident occurrences, and inconsiderateness to ecological issues (Allens, 1994; Henry, 1994; Lobelo, 1996).

2.1.4 Contractor Performance

Exchange of something of value by two or more parties‟ means that they enter into a legally binding agreement between them which is called a contract. Construction is viewed as an industry that public economy relies, (Ejaz et al., 2013). Construction contracts cause mutually contractual and legal commitments on partners that are hard to modify based on fiscal exchanges (Thomas & Ellis, 2007). The client employs the services of a construction firm to execute a contract in order to deliver a project on agreed timeline. Kulatunga et al (2005) propose that contractors have to gauge their performance to get a reasonable market share. Concerning the factors in performance of contractor, Aklnci and Fischer (1998) noted that increase in cost make a major monetary risk for clients and construction firms. Cost-effective expansion and the competitive environment of the construction sector has required construction firms to trim down their mark-ups to continue thriving (Grogan, 1995). The connection between employers and their consultants‟ calls for an evaluation process that is price-based, as Tao and Kumaraswmay (2012) noted. Even then, the least offer frequently results to challenges such as substandard quality, cost increase, including lateness. This generally brings about massive

contractual and fiscal challenges among parties, as evidenced by Palaneeswaran et al (2007).

Clients and owners also influence project performance. In construction, the requirement to improve is necessary since clients need better value from their projects, and contractors require good profits to guarantee their long-term future (Egan, 1998). Improved performance of contractor lead to better client satisfaction, reputation, and competitiveness (Xiao & David, 2003).

Many researchers have conducted detailed investigations performance. Hatami and Behsan (2012) found that contractors are more tolerant of risks that are included in contracts than of additional types of risk. Assaf et al (1996) researched on contractor performance in Saudi Arabia, focusing on the nature of each project, the contractor' s extent of involvement, and how that affects contractor performance. Abbasnejad and Moud (2013) noted that most projects in Iran suffer from delays, causing serious problems to contractors, and that these problems were intolerable and acutely affect Contractor performance, which vary among nations (Proverbs, 1998).

A research done in Jordan, (Rateb et al, 2014) investigated the factors affecting Contractors performance on public construction projects. In this investigation, contractors, consultants, and owners agreed on the most important factors affecting contractor. First among these important performance factors are contractors‟ financial difficulties, shortage of manpower, and too many change orders.

In developing countries several researches have also been carried out concerning contractor performance, for example, a study in Ghana found widespread failures in meeting performance milestones in the construction sector. In several occasions, contractors were held responsible for poor performances and criticized for having limited technical expertise in the use of necessary organization techniques. Small and large contractors in Ghana find it difficult to access funds. Pending bills for executed tasks is extensive and is the chief reason of incomplete projects (Adams, 2008).

In spite of major achievements in performance enhancement in the construction firms of industrialized nations, the construction sector in Ghana cannot be compared (Ofori et al., 2012).

Construction Projects

A project is a temporary endeavor undertaken to create a unique product, service, or result.

Temporary means hate very project has a definite beginning and a definite end. The end is reached when the project's objectives have been achieved, or it becomes clear that he project objectives will not or cannot be met, or the end for the project no longer exists and the project is terminated. Temporary does not necessarily mean short in duration; many projects last for several years. In every case however duration of a project is finite. Unique products, services, or results means a project creates unique deliverables, which are products, services, or results.

Project can create:

- A product to artifact that is produced, is quantifiable, and can be either an end it eminent sulfur component item
- A capability to perform as service, such as business functions up porting production or distribution
- A result, such as out comes or documents.

Uniqueness is an important characteristic of project deliverables. For example, many thousands of office buildings have been developed, but each individual facility is unique-having different owner, different design, different location, different contractors, and so on.

Progressive elaboration is a characteristic of projects that companies the concepts of temporary and unique. Progressive labor action means developing in steps, and continuing by increments. For example, the projects cope will be

broadly described early in the project and made more explicit and detailed as the project team develops a better and more complete understanding of the objective and deliverables (PMI, 2004).

2.1.5 Stages of the Construction Project

Construction project is a complex, unique and one-time effort, as numerous of people, activities and requirements are involved to achieve the project goals. It is restricted by time, budget and quality and performance specifications to satisfy the customer needs. People involved in the Construction process should be familiar with the stages of the process, as the project team works together in coordination seeking successful completion of the project.

Each process in the project is unique and need special management techniques and skills to monitor and keep the project on track. The design and construction process consists of linear path from the initial concept of the project until it so occupancy. The project develops through the stages on step at a time till it arrives to be successfully delivered. These stages are design, bidding stage, pre-construction, procurement, construction, and post-construction (El-sokhn, 2014).

2.1.6 Construction Project Players

The build construction project is collaborative team with various skills and expertise. This team includes many players who have valuable contribution to the project and adding to its complexity at the same time. It is vital for the project manager to identify the players involved in the construction process, their roles and responsibilities and the risk associated to their involvement. The understanding of these relationship increases on the appreciation the of management function in construction (Jackson, 2004).

The players in the construction project are divided into primary players and secondary players. The most important players in any construction project are the owner, the designer and the contractor. These are the primary players of

any construction project, as each of them provides different services to fulfill the project objectives.

On the other hand, the secondary players are as important as the primary players, as they have power and influence on the construction process and its outcome and they cannot be controlled by the primary players. They can be divided into three layers. The first layer includes subcontractors, material supplier and equipment vendor. The second layer includes insurance companies, building codes officials, zoning, labor unions and manufactures. Besides, the third layer includes local government, federal government, trades associations and banks.

The last two layer shave no contractual connection or obligation to any of the primary layers, but they influence the construction project on are gularbas is. Although their effects are not always immediate, they can have a great impact to the whole industry (Jackson, 2004).

Project Success and Failure in the Construction Industry

The construction process appears as ordered, linear phenomenon that can be organized, planned and managed easily. The high rate of failures that occur in the construction projects to be completed on budget and schedule clarifies that the nature of the construction process is not as ordered and predictable as it may appear. The construction process is a complex, nonlinear and dynamic phenomenon that may exists on the edge of chaos sometimes. Therefore, the construction projects are rich in plan failure, delays and cost overruns more than in successes.

Sometimes in case of the acceptance of the outcomes by the stakeholders, higher cost and delays must be tolerable.

This clarify that the success and failure criteria changes from project to project depending on participants, scope, project size, technological implications and many other factors. Therefore, it is vital for project managers and researchers to gain better understanding about success and failure of

construction projects and to identify all the factors that may oppose the project success and leads to failure. Eventually, approve a certain criterion to be used to measure the success of different projects (Jari, 2013).

Success and failure are two sides of the same coin. The understanding and exploration of failure help since organizing and defining success. In spite of large project failure percentage, managers avoid discussing failure cases or accessing any related information and try to hide them. The fear of harming the reputation of the parties involve day aids them from sharing their failure cases.

Beings successful list he ultimate goal of every business activity, as well as the construction industry in order to survive in the construction environment. Over the years, many practitioners and academics attempted to understand and specify the factors of project failure or success, but it was problematic.

- The first reason is due to the unclearness of project success and failure measurements because the parties who are involved in the project perceive the concept differently.
- The second reason is that the list of success and failure factors varies in the literature.

Several factors were tabulated individually, rather than being grouped according to certain criteria to help analyze the interaction between the factors and their effect. Although many factors do not affect the project directly, it can affect the project badly when it is combined with other factors during certain stage of the project.

Failure so occurred at many projects over the last decades. These arch for the success and failure factors had started before 1990s. Although the knowledge in this area then was far from perfection, similarities exist among the literature. The factors that most of the researchers agreed on were poor definition of project objectives and goals, and managerial issues. The20thcentury witnessed the growth of construction industry all over the world. Therefore, the success and failure factors have increased to include the

teamwork, communication and leadership which affect the project objectives directly (Jari, 2013).

2.1.7 Project Management

Project management is the dynamic process that utilizes the appropriate resources of the organization in a controlled and structured manner, to achieve some clearly defined objectives identified as strategic needs. It is always conducted with in a defined set of constraints. Project management in the modern sense beganinthe1950's although it has root further back in the latter years of the 19th Century.

The need for project management was driven by companies that realized the benefit for around projects, and critical need to communicate and coordinate work across departments and professions.

It is now over sixty years since the birth of project management and much of the early works have been collected and put together into formal methodologies. Although many different

Methodologies exist; they all work with the same basic principles and good practices. Running Projects successfully may seem simple, but sixty years on and project failures are still observed.

Projects go wrong for the same reason all the time. One of the biggest sins in project management is that of not learning the lesson of past projects. If one can learn to do this, project failure will be substantially reduced (Haughey, 2014).

Project Management is the process and activity of planning, organizing, motivating, and controlling resources, procedures and protocols to achieve specific goals in scientific or daily problems. A project is a temporary endeavor designed to produce a unique product, service or result. The temporary nature of projects stands in contrast with business as usual, which are repetitive, permanent, or semi-permanent functional activities to produce products or

services. In practice, the management of these two systems is often quite different, and as such quires the development of distinct technical skills and management strategies.

The primary challenge of project management is to achieve all of the project goals and objectives while honoring the preconceived constraints. The primary constraints are scope, time, quality and budget. The secondary and more ambitious challenge is too optimizing the allocation of necessary in puts and integrate them to meet pre-defined objectives.

Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project management is an accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling and closing. The project manager is the person responsible for accomplishing the project objectives.

Managing project includes:

- Identifying requirements
- Establishing clear and achievable objectives
- Balancing the competing demands for quality, scope, time and cost
- Adapting the specifications, plans, and approach to the different concerns and expectations of the various stakeholders.

Project managers often talk of a 'triple constraint' project scope, time and cost- in managing project requirements. Project quality is affected by balancing these three factors. High quality projects deliver the required product, service or result with in scope, on time, and within budget. The relationship among these factors is such that if any one of the three factors changes, at least one other factor is likely to be affected. Project managers also manage projects in response to uncertainty. Project risk Is an uncertain event or condition that, if it occurs, has appositive or negative effect on at least one project objective

(PMI, 2004).

There is a strong relation between project management and project performance. Management in construction industry is considered as one of the most important factors affecting performance of works. A new approach was studied to the measurement of the effect of Building Project Management (BPM) on time, cost and quality output susing15 'cases' derived from UK data.

The evaluation undertaken demonstrates that BPM as it is presently implemented in the UK fails to perform as expected In relation to the three predominant performance evaluation criteria; time, cost and quality.
Web-based construction Project Performance Monitoring System (PPMS) can assist project managers in exercising construction project performance indicators and can help senior project management, project directors, project managers, etc., in monitoring and assessing project performance.

Project management is only one of the many criteria upon which project performance is dependent; it is also arguably the most significant as people formulating the processes and systems who deliver the projects. An adequate understanding and knowledge of performance are desirable for achieving managerial goals such as improvement to institutional transformations, and efficient decision making InDesign, specification, and construction, at various project-level interfaces, using appropriate decision-support tools. It was determined the performance level of their projects in China; identifies PM practices that led to better performance; and recommended key PM practices that could be adopted by foreign construction firms in China to improve project performance (Shaban, 2008).

Project Management Competencies

The construction industry is a project-based industry's contractors survive and grow based on the success they achieve in their projects. Each construction project is unique but the managerial process is normally uniform across projects in a company. As the project is at the core of the construction business, project management competencies cannot be dissociated from overall company performance. Project management knowledge areas and skills have been investigated by many researchers. The most common of these factors adopted for this research is presented below.

• **Schedule management** is the competency of reason in back ward, since in the execution of all projects there is a target date to finish and deliver the job. It is a major enabler of the project to complete on time by the use of a series of processes. These processes are activity definition, sequencing, resource estimating, duration estimating, schedule development and schedule control. The timely accomplishment of a project is dependent on the experience of the project managers. A project manager has to be familiar with severalparametersinaprojectenvironmentformakingaccurateestimatesonwhat may be the cause of a potential delay, or completion of the project on or ahead of schedule.

• **Cost management** activities include planning, estimating, budgeting, and controlling of the project. All these activities ensure the lowest possible overall project cost consistent with the owner's investment objectives.

• **Quality management** refers to the activities in an organization that determine quality policies, objectives, and responsibilities and represents solutions in response to the complex and non-standardize able nature of construction projects that makes it difficult to manage quality. The processes of a quality management system equality planning, quality assurance, and quality control. Even minor defects may require- construction and may impair the facility's operations. Poor quality in constructed facilities can be corrected

only at a cost and may cause delays. Construction companies are incrementally implementing TQM for improving customer satisfaction, obtaining better quality products and higher market share. The main needs in implementing TQM are the commitment of top management with leadership for the application of quality principles and more over to change the quality.

• **Human resources management** is an inevitable dimension of project managements in it is people who deliver projects. People are the predominant resource in an organization and there is a positive association between human resources management practices and achievement of outstanding performance. Organizing and managing the project team are the main duties of human resources management.

• **Risk management** processes and techniques have to be implemented properly in order to increase the performance of a project.

These processes include planning, identification, analysis, responses, monitoring and control of a project. Considering the complex, dynamic and challenging nature of construction projects, risk in a construction project is unavoidable and affects productivity, performance, quality and budget significantly.

However, risk can be transferred, accepted, minimized or shared. Proper management of risk has the potential to decrease the effects of unexpected events.

• **Supply chain management** is the network of different parties, processes and activities that produce products or services? The owner, consultants, contractor, sub-contractors and suppliers constitute the supply chain in construction. Higher performance can be achieved by increasing the quality of communication between different parties and team operation among different parties. It has as strong core relation with project performance. A number of public sector construction initiatives in the UK identified the areas of underperformance amongst suppliers and government clients. These

initiatives have emphasized the benefits of improving supply chain management.

- **Claims management** is of particular importance because the construction activity involves a large number of parties, an environment conducive to conflicts. Documentation, processing, monitoring and management of claims are a part of contract lifecycle. Claims and disputes between construction owners, contractors and other participants can be avoided by clearly stated contractual terms, early non adversarial communication, and a good understanding of the causes of claims.
- **Knowledge management** is essential in accessing information relevant to best practices, lessons learned, historical and schedule data, and any other information necessary to run an efficient project. It can be defined as a vehicle fuel by the need for innovation and improved business performance and client satisfaction. The capability of a company to cope with sophisticated projects is the result of a successful knowledge management.

- **Health and safety management** has a human dimension as accidents during the construction process can result in personal injuries and/or fatalities. Accidents also cause an increase in indirect costs such as the cost of insurance, inspection and conformance to regulations .Strict health and safety management regulations can reduce the number of accidents and accidents' effects on project costs. Important issues found to be as potential solutions to health and safety problems on site are the provision of safety booklets, provision of safety equipment, providing safety environment, appointing a trained safety representative on site, site safety, health planning and management, education and training of workers and supervisors, new technologies, federal regulation, workers' compensation law and medical monitoring.

2.1.8 Performance Management

The use of performance measurement information to help set agreed-upon performance goals, Allocate and prioritize resources, inform managers to either confirm or change current policy or program directions to meet those goals, and report on the success in meeting those goals.

2.1.9 Performance Measurement

The purpose of performance measurement is to help organizations understand how decision- making processes or practices led to success or failure in the past and how that understanding can lead to future improvements. Key components of an effective performance measurement system include these:

• Clearly defined, actionable, and measurable goals that cascade from organizational mission to management and program levels;

• Cascading performance measures that can be used to measure how well mission, management, and program goals are being met;

• Established base lines from which progress toward the attainment of goals can be measured;

• Accurate, repeatable, and verifiable data; and

• Feedback systems to support continuous
Improvement of an organization's processes, practices, and results (National Research, 2005).

Performance measures are recognized as an important element of all Total Quality Management programs. Managers and supervisors directing the efforts of an organization or a group have a responsibility to know how, when, and where to institute a wide range of changes. These changes cannot be sensibly implemented without knowledge of the appropriate information upon which they are based. In addition, among many organizations there is

currently no standardized approach to developing and implementing performance measurement systems. As a result, performance measures have not been fully adapted to gauge the success of the various quality management programs practiced.

As a process, performance measurement is not simply concerned with collecting data associated with a predefined performance goal or standard. Performance measurement is better thought of as an overall management system involving prevention and detection aimed at achieving conformance of the work product or service to customer's requirements. Additionally, it is concerned with process optimization through increased efficiency and effectiveness of the process or product. These actions occur in a continuous cycle, allowing options for expansion and improvement of the work process or product as better techniques are discovered and implemented.

Performance measurement is primarily managing outcome, and one of its main purposes is to reduce or eliminate over all variation in the work product or process. The goal is to arrive at sound decision about actions affecting the product or process and its output.

The goal of Performance measurement system is to implement strategy. In setting up such systems, senior management selects measure that best represent the company's strategy.
These measures can be seen as current and future critical success factors; if they are improved, the company has implemented its strategy. The strategy' success depends on its soundness. A performance measurement system is simply a mechanism that improves the likelihood the organization will implement its strategy successfully.

Comparing performance measurement systems to an instrument panel on a dash board provides important insight about the mix of financial and nonfinancial measures needed in a management control system: A single measure cannot control a complex system; and too many critical measures

make the system uncontrollably complex.

Performance measurement systems-like a dashboard and benchmarking-have a series of measures that provide information of many different processes. Some of these measures tell the manager what has happened. Other measures tell the manager what is happening.

Management theory and practice have long established a link between effective performance measures and effective management. The effectiveness of any given performance measure depends on how it will be used. For performance measures to have meaning and provide useful information, it is necessary to make comparisons. The comparisons may evaluate progress in achieving given goals or targets, assess trends in performance overtime, or weigh the performance of one organization against another. Performance measures used as a management tool need to be broadened to include input and process measures. One approach is to use an array or score card composed of multiple measures.

The Balanced Scorecard is one such approach that assesses an organization and its programs from four different perspectives: customer, employee, process, and finance. 'The score card creates a holistic model of the strategy that allows all employees to see how they contribute to organizational success. It focuses change efforts. If the right objectives and measures are identified, successful implementation will likely occur. 'The objective and process for construction and construction project management create a good environment for the effective use of benchmarking for measuring and improving performance. Benchmarking is a core component of continuous improvement programs.

2.1.10 Overview of Project Effectiveness Measures in the Development of Construction Projects:

The identification of project effectiveness measures is associated with project 'results' in terms of accomplishing core business and project objectives, users'

satisfaction and the use of the project. Ten possible indicators are compiled for effectiveness measures. These are: client satisfaction on service, user satisfaction with product, project effectiveness, project functionality, free from defects, value for money, profitability, absence of any legal claims and proceedings, learning and exploitation and generate positive reputation.

2.2 Factors Necessary for a Successful Construction Project

Project is a complex, non-routine, one-time effort limited by time, budget and resource and performance specifications designed to meet customer needs. Attempts to understand the causes of project failure or success have proven problematic, despite attempt by many practitioners and academics over the years. Project demands have constantly increased over the last decade and have driven our society into a constantly changing environment.

Project management is a task derived from an organization that enables professional project managers to use their skills, tools and knowledge to plan, execute and control a unique project with in a limited life span by meeting the specification requirements of the organization. Since the outcomes of the capital projects have strategic implications on the success and profitability of the business, the ability to deliver based on pre-determined objectives should be critical to the company's success. Project success can be defined as meeting the required expectation of the stake holders and achieving its intended purpose. This can be attained by understanding what the end result would be, and then stating the deliverables of the project.

A construction project is completed through a combination of many events and interactions, planned or unplanned, over the life of a facility, with changing participants and processes in a constantly changing environment. Certain factors are more critical to a project’s success than others. These factors are called critical project success factors.

Various project success factors have been identified by different researchers in different projects around the world.

Community involvement, project objectives, technical innovation, uncertainty, politics, schedule duration urgency, financial contract, and implementation process were established as the critical success factors in projects. Success has been the ultimate goal of every business activity. It is highly important for the organizations to be successful in their businesses in order to survive in competitive business environments such as construction.

The construction industry is changing constantly with the developments of new business methods and technologies. Thus, constructions companies have to adopt and develop appropriate strategies to be more competitive in this industry and get success in their businesses. For a project to be successful, it is essential to understand the project requirements right from the start and go for project planning which provides the right direction to project managers and their teams and execute the project accordingly. A successful project is one that is delivered on time and managed within the budget, Time, cost and quality have been recognized as 'triple constraint 'or important elements of project success.

2.2.1 Project Success Classifications

• Project management success versus product success: Project success criteria consist of Project management success and Product success.

• Project management success covers meeting time, cost and quality objectives. On the other hand, product success deals with the ability of the project's final product to meet the project owner's strategic organizational objectives; satisfaction of users' needs and satisfaction of stakeholders' needs where they relate to the product.

• Project success versus project management success: Project success is measured against the overall objectives of the project while project management success is measured mostly against cost, time and quality (so called performance).Delivering project success is necessarily more difficult than delivering project management success since it involves second order

control.

2.2.2 Success Factors in a Construction Projects

Increasing uncertainties in technology, budgets and development processes create a dynamic construction industry. Building projects are now much more complex and difficult and the building project team face sun matched changes. The study of project success/failure and Critical success factors is a means of understanding and thereby improving the effectiveness of construction projects. Several success factors for the construction process are as follows:

- **Clarity/Definition of Project Objective**

To state clearly the expected end result, with consultation with the related parties.

Although each party might have different specific goals in mind for the project, they must spell out their goals,

To state the communicated and defined goal to all parties,

To state the clarified time and cost objectives.

- **Scope of Project**

To state the general direction and define the client's requirement.

To present a Clear design brief with minimal subsequent changes.

A brief must be exact and owned by the client at the highest (strategic) level within the client and project organizations.

- **Project Manager**

The Project Manager is the key person in the project. They must demonstrate multi-dimensional abilities including interpersonal, technical and administrative skills.

The most important element is that the project manager must clearly understand their role as project leader, clearly defining their extent of

involvement, and the authority and control they exercise over personnel. Among the main elements are:

Personality: the project manager must have a personality which encourages respect from team players, associates and peers.

Leadership: the project manager should have leadership skills and be able to apply competent managerial skills. The project manager should have the ability to persuade other members of the group to their view, and be able to resolve conflict between parties. Organizing- the project manager should be responsible for organizing, selecting and defining the responsibilities of the project team.

Coordinating: the project manager should identify interfaces between the activities of the functional departments, subcontractors, and other project contributors.

Controlling: the project manager should be responsible for monitoring progress, identifying problems, communicating the status of interfaces to contributors, and initiating and co-coordinating corrective action.

Motivating: the project manager should motivate the project team to perform their duties, and also convince the project team to co-operate with each other.

Technical knowledge and experience: the project manager must possess good technical knowledge and experience, since most of the project is highly technical (ArtiJ.Jari, 2013).

- **Project Team Commitment**

All participants must understand and be dedicated and strongly committed to achieve, maintain and fulfill project goals.

All participants must be committed to the concept of project planning and control and must be able to put the concept into practice. They must understand the project management process, its purpose and values, and be committed to following the steps and necessary procedures.

- **Capability and Cooperation**

All participants must possess adequate capabilities, including skills and experience. All participants must retain appropriate interpersonal skills. All participants must maintain good working relationship between the client, the project team members and stakeholders. All participants must sustain a healthy work attitude (ArtiJ.Jari, 2013).

- **Planning**

The plan, or schedule, should be prepared as early as possible. The plan should be prepared with as much detail as possible, including during the design process and throughout its phases. The detail required includes individual actions for project implementation, the party responsible for each action, and the technical standard required.

The plan should be realistic; it's should identify the appropriate work load for the project team. The plan must be updated regularly in order to keep pace with the project's development. The team should be prepared to re-plan the jobs schedule to accommodate frequent changes on dynamic projects. The team should in corporate detailed planning guide lines for termination.

- **Control**

Schedule control–the project's managers and supervisors should jointly agree on intermediate milestones and build the detailed schedule around these. Successful project teams mark the achievement to mile stones formally (for example by celebrating) in order to break the monotony of a long schedule into easily managed portions.

Costs control–focus on tracking the money spent. This requires detailed actual costs, and one of the best monitoring aids is a plot of plan versus actual costs on a cash-flow curve, for example, an earned–value analysis system.

Quality control–focus on ensuring the project reaches the agreed and designed level of quality. It must be closely examined during the entire process.

Methods of control include regular meetings and day to-day reports etc.

- **Appropriate size of work package and environment**

Divide the project tasks into appropriate sizes and identify there relevant parities responsible for each task.

Maintain the appropriate level of staff or the amount of work that needs to be done. Consider the natural environment e.g. Weather. Consider sustainability, e.g. Supply of materials. Consider the political environment, e.g. the legal requirements of the regulatory authorities.

- **Communication and information management**

Initiate and maintain adequate communication channels among the project team.
Ensure there is some way to manage the flow of information. The suggested methods of transferring information should include drawings, manuals, meetings and letters.

- **Top management support and Health and safety**

Provide the necessary resources, authority and power for performing the project ensure
Legislative health and safety requirements are considered (ArtiJ.Jari, 2013)

2.2.3 General Advantages of a Critical Success Factors Approach

Critical success factors can reduce organizational uncertainty. Developing and communicating a set of Critical success factors can reduce the dependence on the apparent aims of the organization. Critical success factors reflect the implied, collective drivers of key managers and as a result area more dependable and independent articulation of the organization's key performance areas.

Critical success factors are more dependable than goals as a guiding force for the organization. An organization can set good goals that, in theory, will move the organization to ward its mission. However, if the goals are poorly articulated or developed, this is not guaranteed. Critical success factors are reflective of what good managers do well to move the organization to ward its mission, regardless of the quality of the goals that have been set.

Critical success factors are more likely to reflect the current operating environment of the organization. Goal setting tends to be a yearly activity that is seldom revisited until performance measurement. Used properly, Critical success factors are likely to be more dynamic and to reflect current operating conditions because of the many sources of Critical success factors.

Critical success factors provide k ey risk-management perspective for the organization to consider. The risk perspective of executive-level managers is built into Critical success factors, so their 'radar screen 'I exposed to the organization as a whole. Critical success factors can be valuable for course correction.

When Critical success factors are made explicit, manager soften realize that their perception of what is important to the organization may not match reality or they may realize that they don't fully understand the current operational climate. Thus, they can use Critical success factors to realign their operating activities.

A unique strength of the CSF method is that it takes into account the changing environment with which organizations and managers must deal. Also, CSF is especially suitable for top management and for the development of organization; the method produces an agreement among top managers about what is important to measure in order to gauge the organizations success (Arti J. Jari,2013) (Azeb Getahun 2016). Comparative Analysis on Factors Affecting Performance of International and Local Contractors in Road Projects Administered by Ethiopian Roads Authority).

2.2.4 Empirical review

Researchers in different countries investigated factors affecting performance of construction projects are identified on the studies conducted, the below are to mention silsome.

Ghaleb Sweis, (2014) has found in his study at University of Jordan, contractors' financial difficulties, shortage of manpower, and too many change orders from owners were the major factors affecting the performance of contractors in Jordan. Using the main concepts and terminology of Drewin's open conversion system, we note that the main effects on contractor performance are related to the internal environment of the system, especially for contractors, and to the input factors relating to labor manpower for the owners. Meanwhile, the effects of equipment and material, especially the exogenous factors, have a low or even negligible effect on contractor performance during construction projects.

Akure, (2017) has studied at on do state Nigeria university, the most significant criteria for contractors' performance in construction project in Akure, Ondo state Nigeria is when projects are completion to time, completion to budget and completion to quality requirement. Quality related factors, project management related factors and procurement related factors are the most important factors affecting contractor's performance in Akure, Ondo state Nigeria. It was concluded that to improve performance of contractors on construction projects, appropriate planning, good leadership and good communication must be enhanced.

Factors Affecting the Performance of Construction Projects: A Survey of Construction Projects in the Coastal Region of Kenya Peter Orero Nyangwara, has recommended to develop performance measurement frame work and modeling system in order to measure performance of construction organizations and projects. In addition, it is recommended to study and evaluate the most important factors as a case study of construction projects in the Coastal region of Kenya

MATU JOHNSON, (2016) at MWANGI,Kenya his study established that working capital aids construction firms to work efficiently with no fiscal difficulty of making the payment of immediate liabilities, procuring of raw materials and payment of remuneration, wages and make payment without any delay. The findings are in line with the research by Akinsulire (2002) that sufficient working capital aids in sustaining solvency of the business by providing continuous flow of operations.

This is also in agreement with Rahman (2013) who indicated that financial stability of contractors and adequate cash flow is critical in keeping construction progress as planned.

Ameh observes that inadequate funds lead to time overrun and adequate funding guarantees reasonable cash flow. Therefore, the study concludes that availability of adequate working capital was very vital in enhancing performance of contractors in the road construction sector.

The study established that skilled man power enables the construction company to achieve overall goals of the company as skilled employees delivered quality work. The findings are in support of the research by Trendle (2008) that skilled employees perform quality work and can increase the number of clients quickly than any other organization. Thus the study concludes availability of skilled man power enhanced the performance of contractors in the road construction sector.

The study revealed that coordination among departmental heads in a construction firm improve firm productivity, fast and effective communication transfer among managers and participants speeds up road construction process and performance. The findings are in line with the research by Armstrong and Stephen, (2008) that a strong organizational structure offers a comprehensive management plan that is easier to create and execute to help maintain a strong managerial core. The study therefore concludes that strong organizational structure enhances the performance of contractors in the road construction sector.

The research findings noted that one role of client support is to ensure involvement of stakeholders and/or project beneficiaries throughout the project cycle, as it was considered paramount in achieving project success. The study further revealed that client support services helped to curb irregular funds disbursements and thereby reduce on project delays and/ or stalling of road construction projects.

The study also confirmed that prompt payments and approvals is considered very crucial in facilitating timely project completion and that insufficient support causes project costs overrun, disputes, arbitration costs, litigation and project abandonment. The study therefore concludes that availability of client support enhanced the performance of contractors in the road construction sector.

Azeb, (2016) Comparative Analysis on Factors Affecting Performance and International Contractors in Road Projects Administered by Ethiopian Roads Authority, and The major factor that is affecting both groups of contractors has found out to be delay due to right-of–way problem. Since there is no clear coordination between the client ERA, local administrations and the public, the problem is worsening. It is a major factor for both groups of contractors because contractors lose their time, money and other resources and will be forced to work less efficiently or even be idle.

2.2.5 Summary of Empirical review

From the above different reseachers study it is found that contractors performances are affected due to different reasons like:-

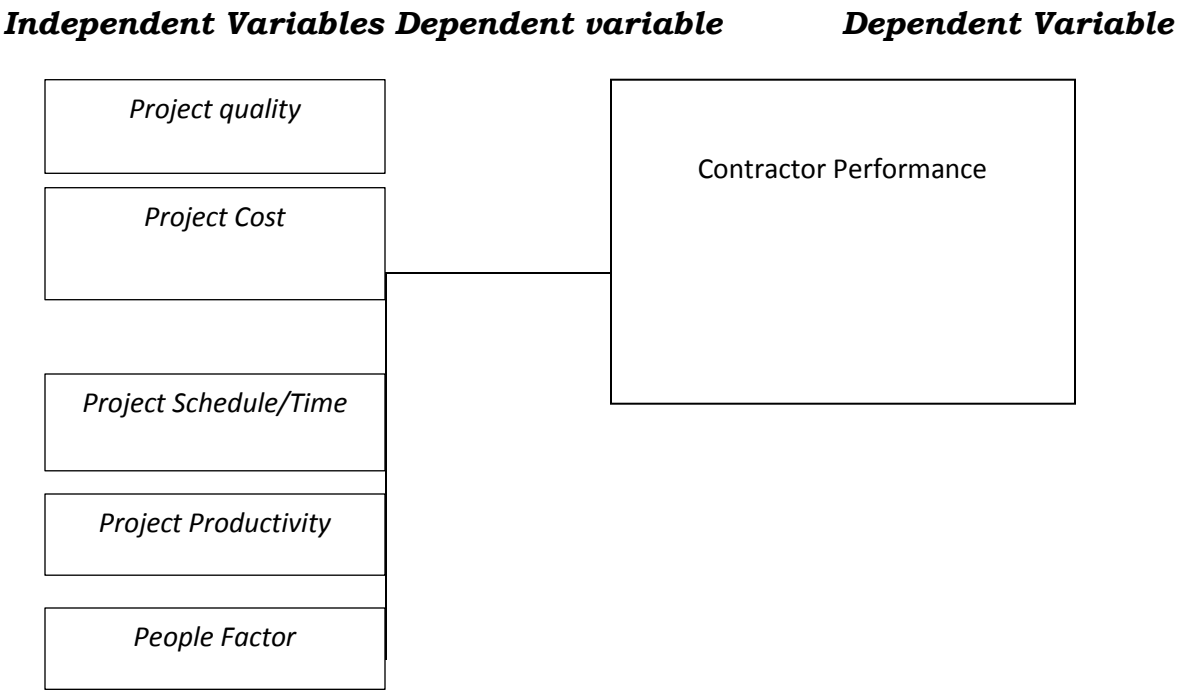
- Internal environment of the system like equipment and material.
- Quality, project management and procurement related factors are the most important factors affecting contractor's performance.
- Appropriate planning, good leadership and good communication improve performance of contractors on construction projects
- Availability of adequate working capital has vital role in enhancing performance of contractors in the road construction sector.

- Researchers has mentioned that performance measurement frame work and skilled man power has also big role on contractor's performance.

2.2.6 Conceptual Framework

Different researchers in different countries investigated construction project performance affecting factors and success criteria from different industries perspectives. In this sub section, the methodology used and findings identified on studies conducted on project success, success factors and success criteria are reviewed. There are number of studies on success factors in the construction industry. Chua et.al (1999), Cooper (2001), Alkathami (2004), and Jha and Lyer (2008) adopted the success factors identified by Ashley et al (1989). It can be seen that critical success factors have been predominantly contributing towards enhancing the performance level and success of projects.

Fig 1 Conceptual frame work adapted from Ashley & Jaselskis (1987)



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology that is used in the study. It outlines the study design, target population, sampling procedure, methods of data collection, validity and reliability and data analysis methods as well as operationalization of variables. All these are applied in order to achieve the research objectives.

3.2 Research Design

Research design is the scheme, outline or plan that is going to be used to generate answers to research problems. This research problem is going to be study through the use of descriptive research design. As this type of research being conducted in the history of Ethiopian Airlines is for the first time, the research problem is going to be studied through the use of descriptive research design.

According to Kothari (2007), descriptive survey research design is a type of research utilized to find data that can. assist to establish exact character of a cluster. A descriptive survey involves getting answers to questions (often in the form of a Questionnaire) from a large cluster of persons either by mail, telephone or in person. The main benefit of descriptive survey research is that it contains potential to grant us a lot of information from a fairly huge sample of individuals. Using the research design, this study will focus on acquisition of quantitative and qualitative data from contractors involved in the construction sector.

3.3 The Research Population and Sampling

The population size of this research is sixty (60) to select the respondents for the questionnaire a purposive sampling technique was employed.
This sampling method is chosen for its convenience in allowing the researcher to focus on a limited number of contractors – that were selected through bid process and technically qualified and they will be ready for any construction project in Ethiopian Airlines. These pre-qualified contractors have experienced and know what looks like the construction process in Ethiopian airline so they will provide the right and actual data.

3.4 Sampling Size and Sampling Design

3.4.1 Sampling Design

In this study, the study design adopted quantitative data collection using standard survey questionnaire. The stratified random sampling technique used to select contractors, employees, from these sections to this study. The strata's used to categorize respondents are four group this are Prequalified contractors which handles big projects, small scale contractors which handle small projects, facility planning employees which supervise the contractors as a consultant by representing Ethiopian Airlines and Engineering & Construction Works Maintenance Department employees which will own the newly constructed building after it is handover to the facility planning section from the contractor. Their no is described in the below table.3.1

To address factors which affect performance of contractors the questioner will be distributed to all strata's since they are few in number.

Table 3.1 Sampling strata

Item	Description	Number
1	Pre-qualified Contractors	25
2	Small Scale contractors	20
3	Facility planning Employees	10
4	Engineering and Construction works Maintenance Department Employees	5
	Total	**60**

3.4.2 Sample Size Determination

In principle, accurate information about given population could be obtained only from census study. However, due to time constraint, in many cases, a complete coverage of population is not possible; thus sampling is one of the methods, which allow the researcher to study relatively small number of units representing the whole population (Sartnakos, 1998)

In order to sample the respondents, the researcher used probability sampling of stratified sampling technique with randomly selected sample will serve as a sampling frame.

The respondents were selected based on their experience, information and area of work they have about project implementation and management challenges in their respective organization in relation to airline industry.

The total population size which is prequalified contractors list and Ethiopian airlines concerned sections like facility planning and Engineering sections are taken which is total population size sixty (60).

Table 3.2: Identified factors affecting the performance contractors in Ethiopian Airlines.

I/No	Identified Factors Affecting Performance of Contractor
A	**Cost Factors**
1	Liquidity of the organization
2	Cash flow of project
3	Cost of material and equipment
4	Escalation of material prices
5	Differentiation of currency prices
B	**Time Factors**
6	Poor estimation of the project time
7	Average delay due to Right-of-way problem
8	Percentage of orders delivered late
9	Average delay in claim approval
10	Average delay in regular payments
11	Unavailability of resources
12	Average delay because of materials shortage
C	**Quality Factors**
13	Conformance to specification
14	Availability of personals with high experience and
15	Quality of raw materials
16	Quality of equipment's in project
D	**Productivity Factor**
17	Number of new projects / year
18	Management-labor relation ship
19	Sequencing of work according to schedule

I/No	Identified Factors Affecting Performance of contractors
E	**Client related Factors**
20	Information coordination between owner and project
21	Leadership skill s of project manager
22	Number of disputes between owner and project parties
23	Number of rework incidents
F	**Regular and Community related Factors**
24	Cost of compliance to regulators requirements
25	Number of non-compliance events
G	**People Factor**
26	Employee attitudes in project
27	Recruitment of employees and competence
28	Motivation of employees
29	Belonging to work
H	**Health and Safety Factors**
30	Application of health and safety factors in organization
31	Project location is safe to reach
32	Reportable accidents rate in project
I	**Environmental Factors**
33	Wastes around the site
34	Climate condition

3.5 Data Type and Source

Data Type

The date type will be primary and secondary data

3.5.1 Primary Data Sources

The primary data was collected from facility planning and management section, contractors and user section using a standard survey questionnaire. It was developed to identify factors which affect contractor's performance assess their satisfaction level and get both quantitative and qualitative data. The facility Engineers, contractors and other employees who has direct relation with construction project are chosen to fill the questionnaire and this will help to receive unbiased and more accurate response.

Table and graph is used to analyze data collected.

3.6 Method of Data Analysis

The principal purpose is to rank the identified factors of performance from all the groups and find out the major factors that are required to be given due attention in the performance measurement of Contracts to substantially minimize the poor performance projects in Ethiopia Airlines.

The data gathered were analyzed through descriptive statics. Mean and Percentage were used to calculate and rank of factors affecting contractor's performance of Ethiopian airlines construction projects. Calculating the relative importance index (IRR) rank of each factors were undertaken for each respondent by calculating the mean. Taking the mean of all respondents finally indicates the rank. This guides to propose on how to improve the factors which is level of rank is high to meet project goals. This in turn opens door for the organization and other researchers for further research considering the emerging field of study, Project Management.

3.7 Reliability Analysis

Reliability analysis reefers to the fact that a scale should consistently reflect the construct it is measuring. It is measured using Cronbach's alpha test. Cronbach's is a name used for equivalent reliability as estimate of the reliability of psychometric test. Cronbach's is a measure of internal consistency, that is how closely related a set of items are as a group. It is a measure of scale reliability. The minimum acceptable value of Cronbach's is 0.7 meanwhile the maximum expected value 0.9 above this the value is perceived as redundancy or reputation. The reliability test for this study as show in the table below is 0.895 based on the SPSS analysis result.

Table 3.3 Source: Researcher's own compilation of survey data and SPSS output (2019).

Cronbach's Alpha	Cronbach's Alpha Based on standardized Items	No. of Items
0.895	0.947	80

3.8 Data Analysis Approach

For each factors affecting performance of contractor's respondents were requested to indicate the degree of impact. The degree of impact has been categorized into five scales. Before starting the analysis, weightings have been assigned to each of the categories as 5 for very high, 4 for high, 3 for moderate, 2 for neutral and 1 for none. Then the responses given by each of the respondents have been summarized and counted.

The analysis was aided by the use of Statistic Package for Social Science (SPSS) where the scores assigned to each factor by the respondents were entered and consequently the responses from the questionnaires were subjected to statistical analysis for further in sight. The contribution of each of the factors to overall performance was examined and the ranking of the attributes in terms of their criticality as perceived by the respondents was done by use of Relative Importance Index (RII) which was computed using equation [4.1] and the results of the analysis are presented from Table 4.4 to table.

$RII=\Sigma W/(A*N), (0\leq RII\leq 1)$ ----------[Eq.3.1]

Where:

W–Is the weight given to each factor by the respondent's and ranges from1 to 5, (where '5'is 'Very high' and '1'is 'Never')

A-Is the highest weight (i.e.5 in this case) and;

N–is the total number of respondents.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 INTRODUCTION

This thesis asses Contractor Performance in case of Ethiopian Airlines. From literature review and past studies, a general image of the environment in performance measurement is discussed. In addition to that, the theoretical background of performance measurement has been assessed to address the potential factors that influence performance of contractors.

Based on this questionnaire was developed to collect data from professionals who have sufficient experience on possible challenges encountered by on projects administered by Ethiopian Airlines.

In these chapter explanations to the issues related to distribution of the questionnaire, collection of responses, analysis and discussion of the data acquired through the responses from professionals are presented.

4.2 Questionnaire Design and Facts

The following 34 factors for contractors only were identified from the Literature review this are cost factor, Time factor, quality factor, productivity factor etc. this found to be relevant to the underlying requirements of this thesis. These first thirty-four factors were grouped into ten groups based on literature review.

The factors, which are considered in the questionnaire, are summarized and collected according to previous studies and other factors are included as required by these theses. The lists of the factors are identified in the above table 3.1

A questionnaire survey has been conducted to gather the required information from professionals who are involved in the construction projects in Ethiopian airlines the basic research question. The questionnaire was divided into the following three major sections.

Section 1:

This section consists of inquiries on general background information of the respondent and the organization in which the respondent is representing for.

Section 2:

It incorporates list of thirty-four identified factors for contractors which have effect toward the project success criteria i.e. time, cost, quality, client satisfaction, productivity and others. For each factor the degree of impact has been asked. The degree of impact was categorized on a five scale: Very high, High, Moderate, Neutral, and None.

Section 3:

This section in corporate one open-ended question, which area aimed to get information from what Contractors observe and suggest for better performance of projects based on the current situation.

The questionnaire is attached as annex-A

4.3 Distribution and Response Rate

Detailed questionnaires were designed and distributed for the identification of factors affecting performance of contractors in Ethiopian airlines. The questionnaires were distributed to the Prequalified and small scale contractors. A total of 60 questionnaires were distributed as follows: 25 to prequalified contractors and 20 to small scale contractors, 10 for facility planning section,5 for Engineering and construction works department Table4.3 presents the sample sand their distributions, including the response rate.

Table 4.1: Distribution and response of questionnaire

Item	Description	Number distributed	Number of responses	Number Of response (%)
1	Pre-qualified Contractors	25	**21**	**84%**
2	Small Scale contractors	20	**16**	**80%**
3	Facility planning	10	**9**	**90%**
4	Eng. & Construction Determent	5	**5**	**100%**
	Total	60	51	**88.5%**

From the 60 questionnaires distributed total of 88.5 responses were received, consisting of 21 (84%) from the prequalified contractors, 16(80%) from the small scale contractors, 9 (90%) from facility planning and 5 (100%) from Engineering and construction works section The overall response rate was88.5% as shown in Table 4.3.

4.9 Discussion

To identify the critical factors affecting performance of both groups of contractors, the identified factors were ranked in their order of importance. The following steps have been followed to rank the factors and sort out the critical ones.

- Relative importance indices have been carried out using statistical method.
- Factors have been ranked in the order of their importance for each factor.

• Importance indices have also been determined for each of the ten major causes affecting performance by taking the average of the importance indices under each group.

• The major groups of factors affecting performance have also been ranked and the degree of agreement and significance level of the sets of rankings were determined.

Table 4.2 Professional back ground of the respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
Twelve complete	1	1.8	1.8	1.8
Diploma	2	3.6	3.6	5.5
First Degree	43	78.2	78.2	83.6
Masters	9	16.4	16.4	100.0
Total	**55**	**100.0**	**100.0**	

From the respondents 16.4 percent are master's holders and 78.2 percent are Degree holder and 3.6 percent are diploma holders and 1.8 percent is twelve complete Major groups among the respondents are degree holder this will support the study result.

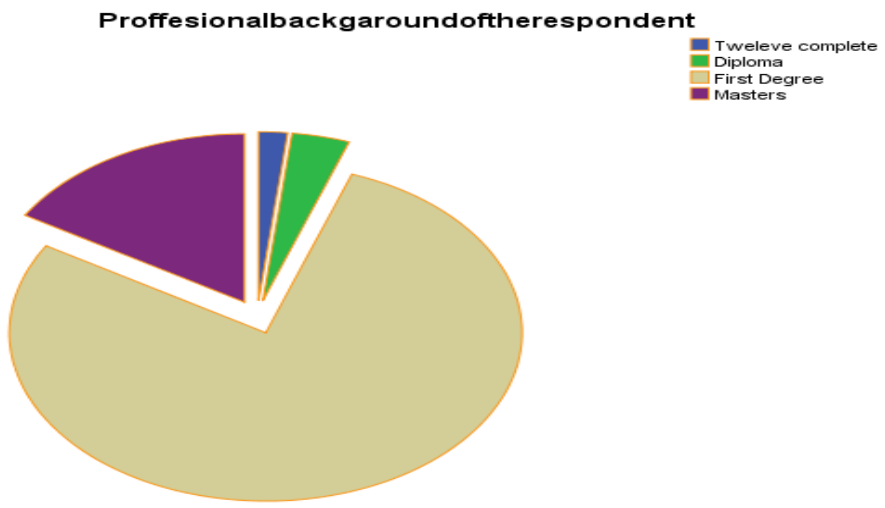
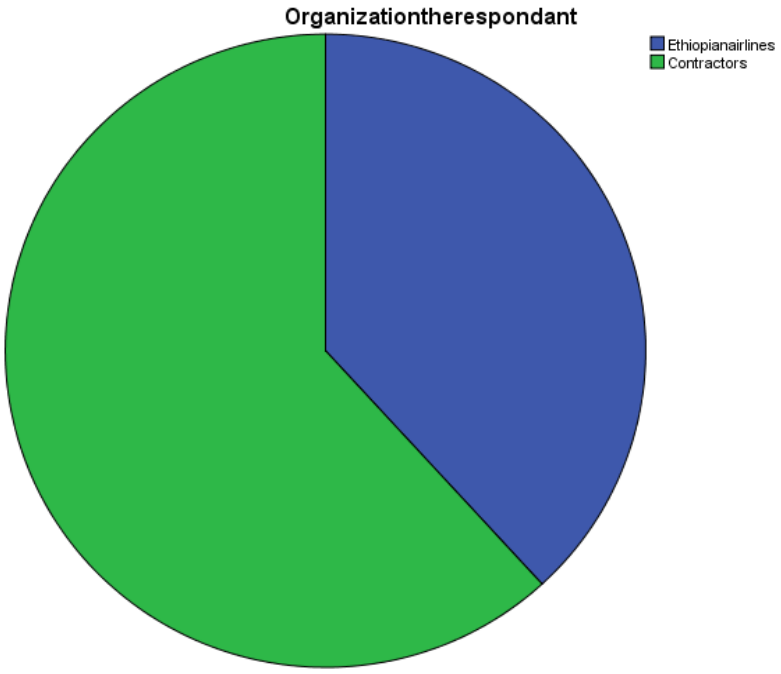


Table 4.3 Organization the respondent

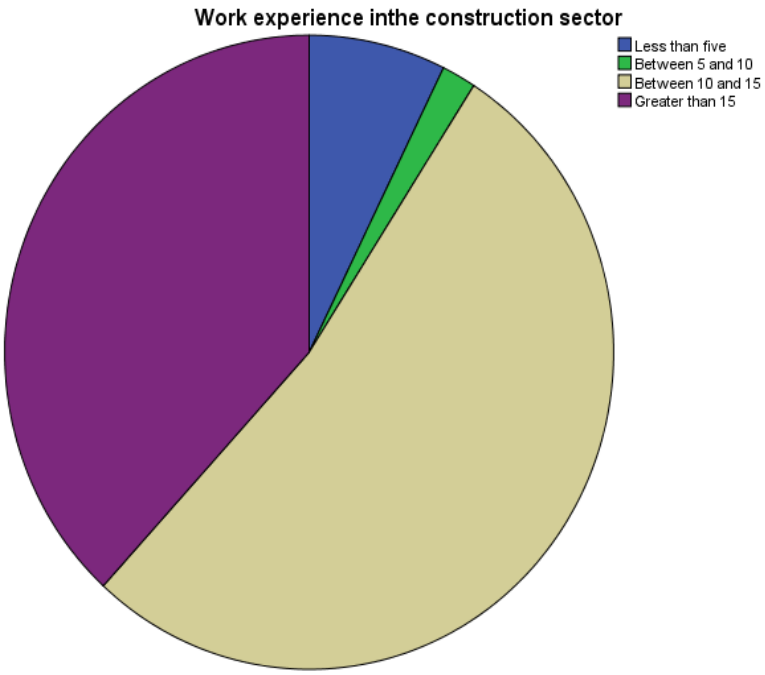
	Frequency	Percent	Valid Percent	Cumulative Percent
Ethiopian Airlines	21	38.2	38.2	38.2
Contractors	34	61.8	61.8	100.0
Total	**55**	**100.0**	**100.0**	



From the respondents 38.2 percent works for Ethiopian airlines and 61.8 are contractors This will assist to address the contractor's problem.

Table 4.4Work experience in the construction sector

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than five	4	7.3	7.3	7.3
Between 5 and 10	1	1.8	1.8	9.1
Between 10 and 15	29	52.7	52.7	61.8
Greater than 15	21	38.2	38.2	100.0
Total	**55**	**100.0**	**100.0**	



From the respondents 7.4 percent have less than five years' experience, 1.8 percent are Between five and ten, 52.7 between ten and fifteen and 38.2 are above fifteen years of Work experience. Among the respondent's majority of them have experience between 10 Up to 15 years of experience this has good impact to address the problems that affect Contractor's performance.

Based on the identified factors to separate of discussion addresses mitigation measures following the outcome of the study in order to minimize the major affecting factors and their effects.

Table 4.5 shows the RII and Rank of factors affecting performance of both Contactors By main categories.

Factors Affecting contractors performance	Mean	Std. Deviation	RII	Rank
Factors affecting performance related to Innovation and learning	4.0545	1.16139	0.81	1
Factors affecting performance related to Innovation and learning	4.0000	.92296	0.80	2
Factors affecting performance related to cost	3.9091	1.02330	0.78	3
Factors affecting performance related to people	3.8545	.91121	0.77	4
Factors affecting performance related to people	3.7455	.98542	0.75	5
Factors affecting performance related to time	3.6545	1.43008	0.73	6
Factors affecting performance related to time	3.6364	1.19200	0.73	6
Factors affecting performance related to health and safety	3.6182	1.38097	0.72	7
Factors affecting performance related to cost	3.6000	1.25610	0.72	7
Factors affecting performance related to quality	3.6000	1.22626	0.72	7
Factors affecting performance related to people	3.5818	1.08339	0.72	7
Factors affecting performance related to productivity	3.5455	.50252	0.71	8
Factors affecting performance related to people	3.5273	1.05153	0.71	8
Factors affecting performance related to Quality	3.4727	1.28891	0.69	9
Factors affecting performance related to Client satisfaction	3.4364	1.34390	0.69	9
Factors affecting performance related to quality	3.3818	.68017	0.68	10
Factors affecting performance related to Environmental	3.3636	1.41897	0.67	11
Factors affecting performance related to time	3.3091	1.47664	0.66	12
Factors affecting performance related to time	3.2909	1.31477	0.66	13
Factors affecting performance related to Innovation and learning	3.2000	1.09545	0.64	14
Factors affecting performance elated to productivity	3.2000	1.06110	0.64	14

Factors affecting performance related to cost	3.1636	1.01404	0.63	15
Factors affecting performance related to health and safety	3.1636	1.66404	0.63	15
Factors affecting performance related to quality	3.1455	1.25341	0.63	15
Factors affecting performance related to productivity	3.1455	.98917	0.63	15
Factors affecting performance related to Client satisfaction	3.1455	1.39335	0.63	15
Factors affecting performance related to cost	3.1273	1.38850	0.63	15
Factors affecting performance related to Environmental	2.9455	1.20828	0.59	16
FactorsaffectingperformancerelatedtoRegulatoryandCommunitysatisfaction	2.8909	1.47413	0.58	29
Factors affecting performance related to cost	2.8909	1.04833	0.58	30
Factors affecting performance related to Regulatory and Community satisfaction	2.8545	1.35289	0.57	31
Factors affecting performance related to time	2.8545	1.29698	0.57	32
Factors affecting performance related to time	2.6909	1.27472	0.54	33
Factors affecting performance related to Client satisfaction	2.6000	1.38243	0.52	34
Factors affecting performance related to time	2.2909	1.44879	0.46	35
Factors affecting performance related to Client satisfaction	2.2182	1.47436	0.44	36
Factors affecting performance related to health and safety	2.2000	1.59164	0.44	37

Table 4.5.2 shows the RII

No.	Factors	Contractors	
		RII	Rank
1	Cost	0.78	**1**
2	people	0.77	**2**
3	time	0.73	**3**
4	Health and safety	0.72	**4**
5	Quality	0.69	**5**
6	Environmental	0.67	**6**

From the data collection and analysis, major factors affecting performance contract or in projects administered by Ethiopian airlines, it is found that major group factors in performance of project implementation are:

1. Cost factors
2. People factors
3. Time factors
4. Health and Safety
5. Quality
6. Environmental

Therefore, based on the response and analysis the following discussion and mitigation measures are indicated for the above major factors.

4.1 Cost Factors

Without a doubt, every project is dependent on it cost or budget. Cost has been addressed as very important success criteria on, where as having an intellectual budget plan and proper cost estimation have been mentioned as prominent success factors in some studies.

In the thesis respondents agree cost factor as one of the major factor affecting performance of contractors.

The major category consists of five factors .Among these the respondents agree that Problems related to liquidity of the organization, poor cash flow, escalations of material price and Differentiation of currency prices are the main ones.

To carry out a project with the intended cost, contractors need to have enough amount of liquid asset which is cash or financial liquidity of company's assets which is the ability to convert assets in to cash.
Cash is a company's life blood. In other words ,a construction company can carry out different projects and have good net earnings, but if it can't collect he actual cash on a timely basis, to will so on foldup ,unable to pay it obligations.

The other major cost factor affecting Contractors is lack of control over cash flow. Frequently contractors experience cash flow problems. It's the nature of the business. However, careful planning can help identify small problems before they become bigger, and adopting several simple cash management strategies can help contractors manage and control cash flow.

The causes of cash flow problems are many. For example, poor utilization of advance payment, when contractors pay suppliers and subcontractors before they receive any payment from the owner of the project they are working on, a cash crisis can result .Other practices that can lead to cash shortages are maintaining excessive in venture, using cash to buy equipment instead of leasing or financing these purchases, allowing large gaps between the time it takes to bill and the time it takes to collect receivables ,and using available cash for outside investments or for advances or loans to officers.

Proper cash flow planning helps contractors make better use of budgets, employ financing and capital more effectively, increase revenues, and boost profits. To analyze cash receipts and disbursements, contractors must know when the work on varying aspects of a project will be performed. This timeline can be used in conjunction with the contract to map out expected cash flows

related to the project. If a contractor's bills aren't paid on time, creditors may demand that future purchases be paid for in cash .Interest and penalty charges on unpaid balances and quickly compound.

Contractors can better control cash out flows by implementing an automated accounts payable system to organize payments by due date. Unless they receive a nearly payment discount, contractors should pay bills when due and not before. It may be possible to negotiate with key suppliers for longer payment terms In addition, contractors experiencing cash flow problems should review existing bank loans to see if they might be restructured under better terms.

Ideally, contractors should be able to generate up-to-the-minute information on the status of each outstanding account. Project managers should have reports that show due dates for project progress payments. The reports should include the date the last bill was sent, the date the last payment was received, the current balance, and, when required, the number of days delinquent. Managersshouldcontactcustomerssoonafterpaymentisduetodeterminewhypay menthas been delayed and to obtain a schedule from the customer that indicates when payment will be made.

Contractors should also focus on collecting retentions. It's important to develop and implement procedures to complete punch-lists, as-built drawings, owner's manuals, and other submittal requirements. Once this information is made available, a contractor is proficient to push for the release off funds from the project agency or owner. Delays in collecting payments for work performed can weaken a company's working capital position. Without adequate working capital, a contractor may not be able to take advantage of opportunities that become available. Cash flow management is essential if a business is to survive and thrive (Knopf, 2009)

Escalation of material price is among the major cost factor affecting performance of contractors. Escalation of material prices affects the liquidity of contractors and profit of their projects Escalation refers to cost changes which result from changes in price levels.

These changes in price levels in turn are driven by underlying economic conditions. Escalation can be driven by change in productivity technology and market condition including high demand labor and material shortage, profit margin and other factors.

4.2 People Factors

In all projects almost all activities are dependent on human resources In other words, it is fast becoming accepted wisdom that it is people who deliver projects and indeed people, who are directly involved in a project, facilitate achieving project goals and consequently 'Project Success'. A project team and its members are a key part of the human resource list of a project. Different researchers have introduced some project success factors, which are all related to having a competent project team.

In this thesis respondents agree that people factors are highly affecting their performance. The major category consists of four factors. Among these the respondents agree that problems related to Recruitment to few employees and competence development is major one.

The word recruitment has many meanings and plays important role employees leave the organization, some retire and some die in saddle. The most important thing is that company grows, diversifies and takes over other units all necessitating hiring of new men and women. Recruitment function stops only when the organization ceases to exist. Therefore, recruitment is a process of searching for obtaining applications of job from among the Right people who can be selected.

A competent work force is the core of any successful company. Without employees that perform at a high level each day, a company will loosen and fail. The key to having competent employees is implementing an effective recruiting and training process. Successful recruiting techniques focus on identifying strong candidates, while successful training techniques consist of providing as much guidance as possible to new employees before letting them jump into their new positions.

Recruitment to employees and competence development has direct relationship with the unavailability of personnel with high experience and qualification. It is after having experienced and qualified personnel that the recruitment of employees can become easy and possible.

4.3 Time Factors

'Time ' or 'Schedule' is one of the most important project success criteria for any project. Time has been addressed as a criterion by which to evaluate a project's degree of success. It has also been mentioned as a factor, which can help the other factors/criteria be met. It is found that the definition of 'Time' is of great importance. 'Time' as the date when a project is most likely to end can be a criterion, but 'Time 'as a manageable component might be considered as a factor.

This major category consists of three factors. Among these the respondents agree that delay due to right-of-way problem, delay due to claim approval and poor project time estimation are major causes for performance of contractors.

Contractors lose their time, money and other resources due to right-of-way problem as their machineries will be idle or forced to work in a less efficient manner or even to stop work for some time.

Right-of-way problem results in a number of costs on any project as price escalation due to extension of time, additional overhead cost on the contractor and on the overall progress of the works for it will no longer be in accordance with the agreed contract.

The right-of-way acquisition process can begin before the design is completed. The procedure is to have a design team leader to prepare a backup documentation to support the design decisions and to provide it to the right of way team. Careful consideration and good practical coordination in dealing with the problem by the design team during the plan development phase can reduce the time and costs associated with the acquisition process. The task of the right- of -way team, which consists of appraisers, land planners, engineers, accountants and other experts, is to estimate fair market value of the property being acquired. After reviewing the work of the design team, the work will extend on to the property to address the issue to concerned parties Delay due to claim approval list the other major factor which is affecting contractors .A claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, and extension of time or other relief with respect to the terms of the Contract .The term "Claim “also includes other disputes and matters in question between the parties to a Contract involved in the County’s construction and repair projects arising out of or relating to the Contractor the construction process. Claims must be initiated by written notice .The responsibility to substantiate claims hall rest with the party making the Claim. Prior to an amicably negotiated settlement, the contract documents usually require the contractor to place his claimed minds at the jurisdiction of the Engineer. The Engineer is also required to act impartially. Should both parties consider the decision of the Engineer to be fair, then the parties will agree to settle the issue. If one or both parties, however, do not accept the decision of the Engineer, alternative disputer solution mechanism is instituted. This usually leads o negotiating amicable settlement or finally to

arbitration. Such occurrences of claims are the source of dis agreements and may sometimes result in disputes that could lead to arbitration proceedings.

4.4 Client Related Factors

A client is potentially anyone who, in carrying out a business or other undertakings, whether for profit or not, initiates a project which includes construction work. The client must ensure that designers, coordinators, contractors and other members appointed to the project team are competent and have adequate resource to carry out the irresponsibility's under the irrespective contractors.

In this case respondents agree that factors related to the client are highly affecting their performance. The major category consists of four factors. Among these the respondents agree that problems related to number of disputes between client and project parties and leadership skill of project manager are major Unrealistic expectations, affecting their ability to reach agreement.

Influencing individuals or groups to accomplish an organizational goal or mission. Management is the process of planning, organizing, directing and controlling a projector activity.

4.5 Quality Factor

Quality, whether it concerns the product or process, has been considered as both project success criterion and factors. Some researchers named it quality performance and considered it as a major project success criterion. In addition, some other researchers addressed quality as a critter ion under the name of product's quality. On the other hand, some researchers considered quality management process as a project success factor, which facilitates the success of other criteria and factors.

The major category in the quality factor consists of four factors. Among these, the respondents agree that unavailability of personals with high experience and qualifications a major cause affecting their performance.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Summary

This thesis has examined the various types of factors which have a significant negative impact in the performance of contractors in construction projects in case of Ethiopian Airlines.

Based on the data obtained from contractors, employees and organization construction projects document, and data analysis result, construction performances are affected. Consensus among respondents of the questioner show that the most performance affecting factors are cost ,people ,time and health and safety factor, followed by quality and environmental factor Microsoft

The main objective of this thesis was to identify and make recommendation on the factors affecting performance of contractors in construction projects. Based on this research objective the following conclusions are awarded and recommendations forwarded.

5.2 Conclusion

1. The major factor that is affecting contractor's performance is found out to be cost factor Problems related to liquidity of the organization and cash flow which are most of the time results of in adequate capital base and lack of control over cash flow, inappropriate use of advance payment, not closing out completed projects and low unit rates fixed during tendering, etc. are among the major problems which are greatly affecting the performance of Local contractors.

2. It is observed that the availability of personnel with high experience and qualification and recruitment of employees and competence development is a major problem for the construction industry.

3. Delay in claim approval which is a result of claims not settles on time by Ethiopian Airlines is leading to dispute between owner and the projects parties and it is highly affecting contractors and the performance of projects. As a result of these the problem is reflecting on the relationship between them and the performance of project.

4. Delay due to right-of–way problem. Since there is no clear coordination between the client Ethiopian Airlines, contractors and consultants It is a major factor for contractors because contractors lose their time, money and other resources and will be forced to work less efficiently or even be idle.

5. Most of the time, the estimation of the project time, which is predetermined by Ethiopian airlines based on the availability of financial resources is affecting both the contractors. The estimation of the project is found out to be unpractical and as a result contractors are suffering from delay and dispute.

6. The presence of competent Project Manager in a construction firm is basic to achieve the goals of a project. Problems related to lack of Leadership skill of project manager is affecting the performance of projects in the construction industry.

5.3 Recommendation

The goal of this research is to identify critical factors affecting the performance of contractors in construction projects administered by Ethiopian Airlines. To this end the following recommendations are forwarded to the client Ethiopian Airlines, contractors to reduce the adverse effects on performance of projects.

For Contractors:

1 Contractor could possibly ensure that they have enough capital base and proper cash flow to execute the works and abstain from the practice of diverting particular project funds to non-project activities to avoid being cash-strapped during the execution of the works.

2. The Contractors could possibly ensure that they have adequate experience for a required assignment, deploy competent project team and employ appropriate construction methods for the required assignment.

3. The Contractors should ensure proper planning and scheduling of the works and ensure effective site management and supervision of the works so as to keep watch on critical activities and try hard to complete projects within the specified time while meeting quality and cost requirements.

4. The contractors, for better control of cost, shall make proper engineering estimation of project cost and schedule duration. This concept can provide early indications of project performance to high light the need for eventual corrective action plan.

5. For better control over cost, contractors need to assign a Cost Engineer and use of application of software to plan, monitor and control cost to deal with cost control.

6. Contractors are required to have project knowledge of Ethiopian airlines, expectations and local preferences, approval processes, operating law; material and quality, differences encountered in work practices, cultural differences, design and construction standards and permit processes. Understanding these differences and fine distinction in different.

For Ethiopian Airlines:

1. Ethiopian Airlines to establish independent right-of-way team to deal with the issue of right-of-way and start the process even before design is completed. It is also the responsibility of ET to play the main role by working in coordination with Security Team (NIS) administrations on providing gate pass on time for contractor employees and machineries to avoid idle time of employees and machineries.
2. ET and contractors should ensure that approval of claims is stipulated with the time frames as to facilitate the progress of works to ensure timely completion.
3. Capacity building of high level professionals and intermediate skilled personnel shall be given prior attention.
4. ET should ensure that proper planning, costing of the works and proper estimation of project time are made during the pre-contract periods to avoid intermittent stoppage of works as a result of funding constraints since this not only increases the construction period but also impacts on the contractors overhead costs and costs associated with mobilization and demobilization during the period within which the works were suspended.
5. To have competent contractors now and in the future, ET should work hard to increase their capacity and number, facilitate ways to arrange importing construction material since ET has the access for tax free and free transportation service (cargo Service) and due to the current foreign currency problem this motivates contractors.

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Elsokhn, (2014) Construction industry has its own position in the national economy of each country,

BNQP, (2009) performance is achieving and accomplishing the planned targets.

Alarcon, (1994) observed that most of contractor performance indicator measures inhibit Their assessment to preferred standards such as, time, cost or output.

Neely, (1998) performance is the method of evaluating previous activities to ascertain present performance.

Hong & Proverbs, (2003) the idea being that the attainment of one facet of performance must not be at the cost of another inadequate performance

Allen's, (1994) Describe poor performance include; poor work ethics and miscommunication among stakeholders, late completion, cost increase, very high accident occurrences, and inconsiderateness to ecological Issues.

Ejaz ,(2013) Construction is viewed as an industry that public economy relies,

Tao and Kumaraswmay (2012) noted the connection between employers and their consultant's calls for an evaluation process that is price-based.

Xiao & David, (2003) Improved performance of contractor lead to better client satisfaction, reputation, and competitiveness.

Assaf et al, (1996) found that contractors are more tolerant of risks that are

Included in contracts than of additional types of risk.

Rateb et al, (2014) investigated the factors affecting Contractors performance on public construction projects

Proverbs, (1998). Contractor performance, which vary among nations

Rateb et al, (2014) investigated the factors affecting Contractors performance On public construction projects.

Adams, (2008) Pending bills for executed tasks is extensive and is the chief Reason of incomplete projects.

Kothari, (2007) descriptive survey research design is a type of research utilized to find data that can assist establish exact character of a cluster

Sarandakos, (1998) sampling is one of the methods, which allow the researcher to study relatively small number of units representing the whole population

WWW.Ethiopianairlines.com,

Appendix I

St. Mary's University

School of Graduate Studies

MA in Project Management

Dear
Respondent,

The objective of this questionnaire is to assess factors affecting contractor's performance in case of Ethiopian Airlines.

This questionnaire is prepared or data collection of a research proposal submitted to St. Mary's university school of graduate studies in partial fulfillment for the requirements of Master Arts in Project Management.

Part one: personal data

1.1. Academic background _____

1.2. Work experience in the construction sector (in years)

Less than 5 ☐ Between 10 and 15 ☐

Between 5 and 10 ☐ Greater than 15 ☐

Part two: Company background information

2.1. Organization you are working for I) Ethiopian Airlines ☐

II) Contractor ☐

2.2 How do you rate the contractor's performance of EAL's projects

Good ☐ Fair ☐ Poor ☐

2.3 How do you rate the project performance of EAL projects?

Good ☐ Fair ☐ Poor ☐

Part three: Factors affecting contractor's performance in different parameter.

3.1 Factors affecting performance in construction project

I/No	Factors Affecting Performance	Degree of Impact				
		Very High	High	Moderate	Neutral	None
A	**Cost factors**					
1	Liquidity of the organization					
2	Cash flow of project					
3	Cost of material and equipment					
4	Escalation of material prices					
5	Differentiation of currency prices					
B	**Time factors**					
6	Poor estimation of the project time					
7	Average delay due to Right-of-way problem					
8	Percentage of orders delivered late					
9	Average delay in claim approval					
10	Average delay in regular payments					
11	Unavailability of resources					
12	Average delay because of materials shortage					
C	**Quality factors**					
13	Conformance to specification					
14	Availability of personally with high experience and qualification					
15	Quality of raw materials					
16	Quality of equipment's in project					
D	**Productivity factors**					
17	Number of new projects/year					
18	Management-labor relationship					

I/No	Factors Affecting Performance	Degree of Impact				
		Very High	High	Moderate	Neutral	None
19	Sequencing of work according to schedule					
E	**Client satisfaction factors**					
20	Information coordination between owner and project parties					
21	Leadership skills of project manager					
22	Number of disputes between owner and project parties					
23	Number of rework incidents					
F	**Regular and community satisfaction factors**					
24	Cost of compliance to regulators requirements					
25	Number of non-compliance events					
G	**People factor**					
26	Employee attitudes in project					
27	Recruitment to employees and competence development					
28	Motivation of employees					
29	Belonging to work					
H	**Health and safety factors**					
30	Application of health and safety factors in organization					
31	Project location is safe to reach					
32	Reportable accidents rate in project					
I	**Environmental factors**					
33	Wastes around the site					
34	Climate condition					

3.4 Please write additional factors that contribute for factors affecting contractor's performance. (If any

_____

_____

_____