JIMMA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF BUSINESS MANAGEMENT
PROGRAM (MBA)

DETERMINANTS OF BUILDING CONSTRACTION PROJECT SUCCESS IN JIMMA ZONE

By

KASSAHUN DUNFA

A thesis Submitted to the School of Graduate Studies of Jimma University for the Partial Fulfillment of the Award of Masters Degree in Business Management (MBA)

October, 2018

Jimma, Ethiopia

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Advisor: Kenenissa Lemi (Ph.D)
Co-advisor:Monanolte Terfa

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DECLARATION

I hereby declare that this thesis entitled "Determinant of Building Constriction Project Success in Jimma Zone," has been carried out by me under the guidance and supervision of D.r Kenenissa Lemi and Monanolte Terfa

The thesis is original and has not been submitted for the award of degree of diploma any University or Institutions.

Researcher's Name	Date	Signature
_____	_____	_____

CERTIFICATE

This is to certify that the thesis entitled "Determinant of Building Constriction Project Success in Jimma Zone", submitted to Jimma University for the award of the masters Degree in Business Management (M.B.A) and is a record of valuable research work carried out by Mr.Kassahun Dunfa, under our guidance and supervision.

Therefore we declare that no part of this thesis has been submitted to any other university or Institutions for the award of any degree of diploma.

Main advisor	Signature	Date
_____	_____	_____
Co-Advisor	Signature	Date
_____	_____	_____

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ABSTRACT

The construction industry plays a major role in the economy as its share of the Gross Domestic Product (GDP) and its interaction with other sectors of the economy. Construction projects are always expected to create a balance between cost, time and quality. Achieving success in building implementation process is the major function of project management. Building construction is the process of adding structure to real property or construction of buildings. Although building construction projects consist of common elements such as design, financial, estimating and legal considerations, projects of varying sizes may reach undesirable end results, such as structural collapse, cost overruns, and/or litigation. For this reason, those with experience in the field make detailed plans and maintain careful oversight during the project to ensure a positive outcome. Quality of projects is one of the traditional and global measure of project performance. For construction projects, the goal and desire of clients, contractors and consultants is to ensure that projects are delivered according to acceptable and agreed standards. Cost estimating is an assessment of the expected cost of any construction project. The accuracy of such estimate has a serious effect on the expected profit of the construction contractor. Schedule delay can be defined as a discrepancy where actual completion of the project exceeds the planed period according to the contract. For this study the researcher tries to select the appropriate data analysis method which is regression analysis. The mean and the standard deviation as well as the spearman rank correlation coefficient of different variable were calculated using SPSS version 20.00. Out of the data collected through questioner and interview. Generally, building construction projects, in Jimma Zone, were determined with quality, cost and time factors. According to the information particularly obtained through interview, company's financial strength, lack of effective communication between stakeholders, effective scheduling and effective site management plus client consultation and support were critical success factors in building construction projects. My recommendation in order to change this problem… Offering license of building only for highly trained personnel's and professionals. The triangulation among consultants, contractors and clients should be strengthened by legal framework.

ACKNOWLEDGEMENT

First and for most, I would like to express my heart-felt gratitude to my advisor, Dr. Kenenissa Lemi and Monanolte Terfa who shared me much of his cumulative experiences, advisory skills, guidance, and technical support, all were priceless inputs for this study to come in to effect.

During my visits for data enquiry from the government and public offices of throughout districts of Jimma Zone, the cooperation and support of the individuals were much credible and reliant. I would like to share my thanks to the study participants for their enormous contributions.

I would like to thank the almighty God and I want to appreciate all members of my family – my children. My special thanks also go to my daughter Azeb Kassahun for the extended moral and material support she had paid during this study.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The study of project success and the critical success factors (CSF) are considered to be a means to improving the effectiveness of project (Albert, Scott and Chan, 2004). Performance can be assured by identifying and eliminating the factors that cause poor project outcomes (Accorf, 2008). Thus, project managers need better understanding of critical success/failure factors and how to measure them. The purpose of this study was to systematically investigate determinants of project success/failure in construction projects. Constructions projects, especially building projects, are frequently influenced by success factors' which can help project parties reach their intended goals with greater efficiency.

Project is a complex, non-routine, one-time effort limited by time, budget and resource and performance specifications designed to meet customer needs. 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 (Ashokkumar, 2014). Construction projects are always expected to create a balance between cost, time and quality. It is possible to have high quality and low cost, but at the expense of time, and conversely to have high quality and a fast project, but at a cost. High quality is not always the primary objective for the client; however, it is extremely important to a successful project (Ali and Wen, 2011). An appropriate level of quality could be determined during all phases of the construction project. Specially, construction and commissioning are two critical phases where the project could impact by its operability, availability, reliability, and maintainability of a facility. Ultimately, a facility with a good construction quality program and minimal defects is more likely to have a smooth and trouble free transition into the commissioning and qualification phase of the project (Ashokkumar, 2014). This creates a great potential for quality improvements in construction projects, as the poor quality could negatively effect to project failures.

Achieving success in building implementation process is the major function of project management. According to Nwachukwu, *et al* (2010), the rate at which building construction

projects fail, or are abandoned, and the collapse of buildings, some even under construction, is retrogressive in a developing economy. When there is a problem of building development failure, abandonment or collapse, everybody looks up to the engineers who in their professional pride and personality ego accept the blame but could not un-ravage the menace. The answer to project success, failure, abandonment, and collapse of building construction lies in efficient project management (Nwachukwu, 2008).

Building construction projects must be made to succeed because its execution often involve substantial funds, the loss through failure or abandonment, has a crippling effect on the capabilities of the investors, the financiers and for the fact that scarce resources are tied down for a long time as opportunity cost for its alternative uses (Accorf, 2008). The project may also be the only future hope of the client; therefore the client may expect nothing but success. Efficient project management is very important especially in the building construction industry which ranks very high among other economic sectors in terms of inter-sector linkages. The importance of this sector as an agent of development is enhanced by its ability to provide gainful employment for the world's teeming population (Accorf, 2008).

As Roy (2005) cited in (Nwachukwu, 2008), ‘’it is evidenced that noticeable development and the aesthetic transformation of the environment is bound up with and predicated on the building construction industry". Hence, building construction industry is a major factor in the social and political integration of the society and ranks as one of the major budgetary areas of developing economies.

In developing countries like Ethiopia, construction industry directly and indirectly related to a big portion of the economy. The construction industry plays a major role in the economy as its share of the Gross Domestic Product (GDP) and its interaction with other sectors of the economy (Adam and Brandt, 2003). When the project complete on time, on budget and achieves the performance goals, it is considered as success Shenhar, Dvir and Maltz, 2001). However, there are some projects which are not completed on time. Therefore, there is a need for the organizations that involve in construction projects to come out with the strategies on how to guide the project until it becomes success in quality, timely and cost effective manners. In the construction industry; time, cost and quality have long been defined as the basic criteria and factors of measuring success (Accorf, 2008). However, other several ideas such as trust, logistics, etc. have been appeared from different researchers.

Project managers would have a clear understanding of which aspects of projects might be critical for their successful completions. 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 (Cooke-Davies, 2002). Therefore, this research attempts to investigate determinants of building construction projects' success from the "triple constraint"—quality, cost and time perspectives.

1.2 Statement of the Problem

Construction project development involves numerous parties, various processes, different phases and stages of work and a great deal of input from both the public and private sectors, with the major aim being to bring the project to a successful conclusion. The level of success in carrying out construction project development activities would depend heavily on the quality of the managerial, financial, technical and organizational performance of the respective parties, while taking into consideration the associated risk management, the business environment, and economic and political stability. Even though other several ideas have been appeared from different researchers, time, cost and quality have long been considered as the basic criteria and factors of measuring success in the construction industry. Project would be considered as success when the project is completed on time, within budget and the quality is satisfied by all (Chan, Scott and Lam, 2002). Quality is, thus, a key factor in assessing the success of projects and project management practices.

The study of project success/failure and critical success factors is a means of understanding and thereby improving the effectiveness of building construction projects. Therefore, this research attempted to investigate determinants of the success/ failure of building construction projects especially in Jimma Zone. This researcher, during preliminary survey, had observed that building construction projects in Jimma Zone faced problems particularly in terms of quality specification, time efficiency and cost effectiveness; i.e., failed to meet the legal, aesthetic and functional requirements in both public and private building construction projects.

Building construction failure does not encourage development and investment and that calls for project management solution. Delays in project completion time and increases in cost of

construction projects have been closely related to specifications and contractors' qualifications such as financial, technical experience (Koushki, Al-Rashid and Kartam 2005) and their participation commence from inception till completion of the construction. The very nature of project funding in Ethiopia poses a significant challenge for government as well as non-governmental agencies. These challenges in project management have an impact on the overall quality and success of projects in Ethiopia. That is why this study was devoted to assess the quality of project management practices by determining and ranking the critical factors (quality, time and cost) that affect building construction projects' success in Jimma Zone.

Regarding the gap the study was concerned to fill, this researcher had seen a number of international contexts such as: Mallawaarachchi and Senaratne, (2015) entitled by, ‘*'Importance of Quality for Construction Project Success*;'' the work of Chirag and Rushabh (2016) entitled by, '' *Exploring Critical Success Factor of Building Project Case Study of Surat*;'' the study of Chinedu and Nwachukwu (2011) entitled by, ‘*'Building construction project management success as a critical issue in real estate development and investment*.'' These studies differ with the current study mainly with geographical variation.

Locally, more important works were observed from three related past studies. The first one is the work of Ephrem (2017) entitled by, '' Critical factors affecting schedule performance: A case of Ethiopian public construction projects – engineers' perspective'' was observed by this investigator. The paper determined the factors for performance of Ethiopian public construction projects revealing that conflict among project participants, poor human resource management and project manager's ignorance and lack of knowledge are detrimental for the projects' performance. It is concluded that the success factor "owners' competence" can significantly contribute to schedule performance of Ethiopian public construction projects. On the other hand, "conflict among project participants," "poor human resource management," and "project manager's ignorance and lack of knowledge" are detrimental to schedule performance of Ethiopian public construction project. While Ephrem considered public construction projects from conflict among project participants, poor human resource management and project manager's ignorance and lack of knowledge, this research views the building construction projects from quality, cost and time dimensions.

Another study by Zinabu (2016) entitled by, ‘’Construction Projects Delay and Their Antidotes: The Case of Ethiopian Construction Sector’’ was also observed. This past study was conducted to access the level of techniques and software packages used for project time control; to identify factors affecting delay in construction projects and to recommend possible mitigation measures. The study adopts quantitative and qualitative methods with the help of primary and secondary data. Primary data was collected using self-administered questionnaires on 140 respondents and key informant interviews with ten experienced practitioners in the construction sector. Secondary data was collected through reviewing of related materials. In fact, the current study seems similar with that of Zinabu's in some ways. Zinabu took project time control as a topic of his investigation which is one of the "triple constraints" (quality cost and time) in which this investigator wants emphasize. Zinabu's methodology, adopted quantitative and qualitative methods with the help of primary and secondary data, was partially similar with the current study. The study revealed low level application of techniques and software packages for project planning and time control. It also identified top five delay factors. His study suggested that project planning and time control can be improved by adopting the right tools, assigning the appropriate staff. The current study differs with that of Zinabu in terms of area. While Zinabu's concern was on the case of Ethiopian construction sector, this study has focused on Jimma Zone and specific to building construction.

Finally, the work of Azeb (2016) entitled by, ‘’*Comparative Analysis on Factors Affecting Performance of Local and International Contractors in Road Projects Administered by Ethiopian Roads Authority*’’ was viewed. Azeb in her findings viewed total of (37) factors that influence performance of Local and International contractors and total of (15) factors that particularly influence the performance of International contractors were identified based on the literature review. The identified factors were categorized into groups depending on types of performance process and statistical analyses of their significance were carried out based on the questionnaire survey with senior professionals from both groups of contractors. The outcome of her analyses showed that all respondents agreed that the performance of the contractors were influenced by all the factors indicated in the questionnaire and the top ten factors which significantly affect performance were then identified. While Azeb's investigation was focused on the performance of Local and International contractors (human aspect) of road construction, the current research depends on logistics aspect of building construction projects.

1.3 Research Basic Questions

In order to meet the objectives of the study, the following over-arching questions would guide the study;

1) What are the determinants of building construction projects' success/ failure in Jimma Zone?
2) How the critical success factors-quality, time and cost- determine the success of building construction projects in the study area?
3) To what extent the critical success factors—quality, time and cost—influence building construction projects in the study area?

1.4 Objectives of the Study

1.4.1 Major Objective of the Study

The main objective of this study is to determine the major factors responsible for the success/ failure of building construction projects in Jimma Zone.

1.4.2 Specific Objectives of the Study

1. To assess determinants of building construction projects success in Jimma Zone.
2. To identify how the critical success factors such as quality, time and cost determine the success of building construction projects in the study area.
3. To evaluate the extent the critical success factors—quality, time and cost—influence building construction projects in the study area.

1.5 Significance of the Study

The study of project success and the critical success factors (CSFs) are considered to be a means to improve the effectiveness of a project. The success criteria for a construction project is not only evaluating the cost, time and quality as a success factors but also including the successfulness of project management, organizational success and trust that leads to customer satisfaction. Thus, the study may provide critical insight over factors of building construction success/ failure, especially, in terms of measures of quality, cost and time so that decision makers, planners and managers, contractors gain relevant pieces of information from the findings and recommendations of the study.

Knowledge of such practices will help realize the critical determinants and improve the quality of project management and consequently project success. This study may contribute its part significant to the body of knowledge on project management best practices and critical success factors, particularly within Western Ethiopian context.

Not the least, the research may also serve as a springboard for those who are further committed doing their studies on similar topic; or serve as reference for those who may be interested in project management research perspectives.

1.6 Scope of the Study

The scope of the study was defined by the spatial and conceptual dimensions. The spatial scope of the study is limited to the context of Western Ethiopia: Jimma Zone, Oromya Region. The aim of this study was to investigate the critical factors leading to building construction projects success. Many critical success factors such as factors related to project manager's performance, factors related to organization, factors related to project, factors related to external environment become apparent from this study. This study identified determinants of building construction projects in terms of quality, time and cost.

The scope of the study was also narrowed in terms of title; it refers to determinants of building construction projects' success/ failure. Therefore, the study attempted to investigate determinants of building construction projects' success/ failure from both government and private project management perspectives.

1.7 Limitations of the Study

It is hard to imagine for a study of this kind could possibly be without limitations. Finding reliable data from all stakeholders may be difficult. Unwillingness of some informants to provide the researcher with true and detail information regarding the problem under study may challenge the quality of the research. In order to reduce problem emanated from respondents' trustworthiness over the existing real determinants of success/ failure of building construction projects, the researcher used cross-checking mechanism (triangulation) of data obtained through various tools and procedures such as questionnaire, interview, document investigation and observation.

The researcher tried to focus on limited samples of building construction projects and began data collection tours so early. In so doing the researcher manipulates time and resources efficiently and effectively so that he proceeds with the schedule to submit the results to Jimma University on time.

CHAPTER TWO

LITRATURE REVIEW

2.1 Definition and Nature of Project

A project, as defined by Wysocki, Beck and Crane (2000), is a sequence of unique, complex, and connected activities having one goal or purpose that must be completed by a specific time, within budget, and according to specification. This can be contrasted from a routine set of activities or daily operations which are intended to be continuous process without a planned end. Projects are also characterized by general attributes such as the purpose, life cycle, uniqueness, interdependencies and conflict (Meredith & Mantel, 2000). Merna and Al-Thani (2008) also defined a project as a unique investment of resources to achieve specific objectives, such as the production of goods or services, in order to make a profit or to provide a service for a community. A project is an irreversible change with a life cycle and defined start and completion dates. A key characteristic of projects is the role played by a key actor aptly named as project manager.

While the project manager is central to the process of project management, s/he is only as good as the project team s/he leads. Thus, it might be an underestimation to propound that the success or otherwise of a project depends solely on the project manager. To ensure the success of projects, the project manager must have the requisite knowledge of project management, which is defined as the planning, organization, monitoring and control of all aspects of a project and the motivation of all involved to achieve project objectives safely and within defined time, cost and performance (PMI, 2008). It is also the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. In Ika and Diallo's (2011) view, project management harnesses the competencies of various individuals, grouping them together and enabling them to achieve the objectives of the project and ensure the success of the project. Quality is a key factor in assessing the success of projects and project management practices.

According to the Project Management Institute's (PMI, 2008) Body of Knowledge projects, which are temporary endeavors undertaken to meet unique goals and objectives within a defined scope, budget and time frame, typically go through a life cycle. The project life cycle, which is a logical sequence of activities to accomplish the project's goals, is made up five stages namely;

the *Project Initiation* stage, the *Project Planning* stage, the *Project Execution stage*, the *Monitoring and Controlling* stage, and the *Project Closure* stage. Attention to detail, along with the involvement of key stakeholders and proper documentation at each stage ensures the success and quality of the project. The sequential phases are generally differentiated by the set of activities that are carried out within the phase, the key actors involved, the expected deliverables, and the control measures put in place (Project Management Institute (PMI, 2008).

For example, setting out the scope and specifications of the project at the initiation stage enables the project sponsor and manager to be clear on the purpose, expected outcomes, budget, deliverables and time frame of the project. In addition to this, experience shows that getting it right at the Planning stage is critical for project success and the sustainability of the project outcomes (Albert and Chan, 2010). Any ad-hoc planning may lead to the consequences of not meeting deadlines and thereby increasing cost, which in turn affects the quality of the project. In many cases, even the scope of the project suffers because time-lapse introduces some exigencies that would demand a change in scope or a deviation from scope. Planning should also involve all project stakeholders to guarantee agreement on scope and specifications, as well as support (Albert and Chan, 2010). The planning stage ties into the Execution of the project during which there should be constant monitoring and controlling of all aspects of the project. This is more so for infrastructure and development projects which are often costly and long-term, and hence, errors tend to be equally costly with long lasting effects, usually with some socio-economic implications. Proper monitoring and control or evaluation of projects during execution enhances the success rate of the project (Albert and Chan, 2010).

2.2 Project Success

Project success can be defined as meeting the required expectation of the stakeholders and achieving its intended purpose. Success criteria or a person's definition of success as it relates to construction often changes from project to project depending on participants, scope of services, project size, sophistication of the owner related to the design of facilities, technological implications, and a variety of other factors (Arslan and Kivrak, 2009). The factors affecting project success are referred to as Critical Success Factors (CSFs). So, project critical success factors are the set of circumstances, facts or influences which contribute to the project outcomes (Pheng and Chuan, 2006).

Certain factors are more critical to a project's success than others. These factors are called critical project success factors. The term Critical Success Factors in the context of the management of projects was first used by John F. Rockart, of MIT's Sloan School of Management, in 1979 as a way to help senior executives define their information needs for the purpose of managing their organizations. Rockart in 1982; defined as those factors predicting success on projects of key areas of activity that directly gives favorable results for a project goal (Freeman and Beale, 2002). Project success requires creating a well-planned project schedule as well as understanding of the key success factors also. It helps the project manager and the stakeholders to take the right decisions and act towards the project success. Most popular CSF' accepted by research community are-project mission, top management support, project schedule/plan, client consultation, personnel, technology to support the project, client acceptance, monitoring and feedback, channels of communication, troubleshooting expertise (Wang and Huang, 2006). Thus, quality can be assured by identifying and eliminating the factors that cause poor project performance.

In developing countries, construction industry directly and indirectly related to a big portion of the economy. The construction industry plays a major role in the economy as its share of the Gross Domestic Product (GDP) and its interaction with other sectors of the economy (Adam and Brandt, 2003). When the project complete on time, on budget and achieves the performance goals, it is considered as success (Shenhar, Dvir and Maltz, 2001). However, there are some projects which were not completed on time. Therefore, there is a need for the organizations that involve in construction projects to come out with the strategies on how to guide the project until it becomes success in the future.

The success of a construction projects is an important issue for most of the governments, users and communities. In modern construction projects there are significant challenges for both the clients and contractors to deliver the project successfully due to increasing complexity in design and the involvement of stakeholders (Doloi, 2009). In the project management literature, project success has been widely discussed by many researchers. Most of the studies in project success have been focus on dimensions in how it is measured and other specific factors influencing the project success (Wang and Huang, 2006). For an architect, a project is success base on the aesthetic performance, and for a contractor, project is success when the contractor gets a profit from the project (Chan, Scott and Lam, 2002).

Project will be considered as success when the project is completed on time, within budget and the quality is satisfied by all (Chan, Scott and Lam, 2002). Success also can defined as much better results than the expected or normally obtained in term of cost, schedule, quality, and safety. The meaning of 'success' itself has undergone many changes due to involvement of so many stakeholders in nowadays complex project environment (Chan, Scott and Lam, 2002). The concept of project success is developed with criteria and standards to help project participants to complete projects with the most desirable results (Chan, 2004).

However, this concept remains somewhat of an enigma as there is no agreement on what should be the critical success criteria on construction projects (Ahadzie, Proverbs and Olomolaiye, 2008). A project is considered an overall success when the project achieves the technical performance specifications and missions, also a high level of satisfaction concerning the project outcome among organization, project team and users (Ahadzie, Proverbs and Olomolaiye, 2008). The successful accomplishment of cost, time, and quality objectives were regarded as project management success which is directly; project success deals with the final project objectives (Pheng and Chuan, 2006).

2.3 Project Failure

Project failure is illustrated by a failure to achieve the four success criteria and is manifested by the lack of application of proven project management techniques. It does not mean that the project may not have been physically completed but the question is when is the completion? Is there any time or cost overrun? Is the quality specified standard achieved? Can it stand the test of time? Can its potential be maximally realized? Is the client and end-user satisfied? If the client is proposing another project, can he insist on working with the same team? If the answers to the above questions are in the affirmative, the project is termed successful but if otherwise it means a failure (Accorf, 2008)

2.4 Importance of Building Construction in the Economy

The strategic importance of building as an economic facility, the construction or developmental process and its investment potential are some attributes that attract all sectors of the economy to its projecting rays. Building facility is like a catalyst that not only serves as an engine that

energies every other sector of the economy but gives impetus to the developmental rating of the environment. We know that all business activities for both public and private sector are housed in a structure called building, production activities, medical and health care, agro based activities, educational activities, political activities, sports, transport sector to mention a few cannot operate proficiently without having direct or indirect need for housing facility. The production of building facility as referred it to building construction or developmental process attracts professionals from all fields of life and non professionals. Not only had that, housing development employment cut across all categories of human endeavor. Building material production, marketing, distribution, supply, storage has a long and strong chain like impact on the economy as we know in commerce that production is not complete unless the products get to the hands of the final consumers.

2.5 Project Management and Success Criteria

Projects can be considered as a set of activities that must be completed in accordance to specific objectives which involve the utilization of a company's resources. The project management is coordinating a process of interrelated functions such as planning, organizing and controlling construction activities for getting successful outcomes. Project management concept and techniques can be applied to any project ranging from simple task, office renovations or refurbishment to complex and complicated projects like the design and construction of an airport or shopping mall (Freeman and Beale, 2002). Success criteria are "measures by which success or failure of a project or business will be judged". Early main criteria for success were assumed to be cost, schedule and quality.

Iron Triangle of Project Management

Golden Triangle of Project Management

Figure 1 Golden vs. iron triangle of project management

The iron triangle of project management emphasizes the relationships among cost, schedule and quality. The golden triangle of project management emphasizes the relationships among cost, schedule, quality and people by placing people at the centre of the iron triangle (Figure 1). People are the one element that ties the other elements together. Mostly emphasis will be given to iron triangle. The emphasis on people in the golden triangle helps maintain a balance among cost, schedule and quality (Iyer and Jha, 2005). Later more potentially competing criteria like ‘‘the satisfaction of all stakeholders’’ were defined. Researches on project success show that it is impossible to generate a universal checklist of project success criteria suitable for all projects. Success criteria will differ from project to project depending on participants, scope of services, project size, and sophistication of the owner related to the design of facilities, technological implications, and a variety of other factors. On the other hand, common threads relating to success criteria often develop not only with an individual project but across the industry as we relate success to the perceptions and expectations of the owner, designer, or contractor (Fortune and White, 2006).

Success criteria according to owners, designers and contractors are as follows:

Owner's criteria: Owner's criteria for measuring success are: on schedule; on budget; function for intended use; end result as envisioned; quality; aesthetically pleasing and return on investment.

Designer's criteria: Designer's criteria for measuring success: satisfied client; quality architectural product; met design fee and profit goal; professional staff fulfillment; met project budget and schedule; minimal construction problems (easy to operate, constructible design); socially accepted (community response); client pays (reliability); and well defined scope of work (Fortune and White, 2006).

Contractor's criteria: Contractor's criteria for measuring success: meet schedule (preconstruction, construction, design); profit; under budget; quality specification met or exceeded; no claims (owners, subcontractors); safety; client satisfaction (Fortune and White, 2006).

Common Criteria: Priority item and one that appears in all three lists (designer, owner, and contractor) in some form is the financial reality of doing business. The owner wants the project completed on time and on budget, and the designer and contractor both expect to meet certain profit or fee goals. All three viewpoints also recognize the absence of any legal claims or proceedings on a project as a desirable outcome. In other words, this is a major criterion for

measuring success. Another common thread among the three groups involves meeting an appropriate schedule as a way of measuring or determining if a project was successful (Fortune and White, 2006).

Unique criteria: It is also evident that there are some unique factors associated with each of the three groups. The designer for instance is looking for a project that will increase the level of professional development and professional satisfaction among his employees. Safety is a high-priority issue for the contractor that would not normally be an issue with the other two groups, because their employees are at much less risk during the design or operation of a building than the contractor's workers is during the construction of a building (Fortune and White, 2006).

2.6 Critical Success Factors for Projects

Cooke-Davies (2002) eliminates a conceptual difference between 'success criteria' and 'success factors'. He stresses that success criteria belong to specific measurement which needs to be formulated in order to conclude whether project succeeds or fails. However, success factors are more about particular levers that can be used by project manager to increase a probability of successful outcome of a project (Munns and Bjeirmi, 1996; Fortune and White, 2006). Project success factors are the elements of a project that can be influenced to increase the likelihood of success; these are independent variable that makes success more likely. Project success criteria are the measures by which judge the successful outcome of a project; these are dependent variable which measure project success. Success factors are those inputs to the management system that lead directly or indirectly to the success of the project or business. Project success factors are not universal for all projects since different projects and different people prioritize different sets of success factors (Fortune and White, 2006).

Project success criteria also vary from project to project and what is acceptable in one project without impact on perceived success is deemed an abject failure in another project. For instance, taking a week delay in an IT project to ensure the objectives are achieved may have a minor impact for this project in terms of success. However, this delay might be a disaster in building a function centre, which is supposed to be undertaken before its opening day. The project implementation process is complex. It usually involves attention to a broad Variety of human, budgetary, and technical variables. From a Project Management perspective, critical success factors (CSFs) are characteristics, conditions, or variables that can have a significant impact on

the success of the project when properly sustained, maintained, or managed. There is a very close link between the type and scope of projects and respective Critical Success Factors (Schultz, Slevin and Pinto, 1987 cited in Fortune and White, 2006).

The most important CSFs within the Project life cycle are as follows:

1. Project Mission-Initial clearly defined goals and general directions. The preparation of a detailed project scope statement is critical to project success.

2. Top Management Support- Willingness of top management to provide the necessary resources and authority/ power for project success. The flexible and adequate access to organizational resources is considered as a core precondition for effectively executing the project activities. This can hardly be available without definite and timely reaction and support from the top management of the project-executing organization.

3. Competence of Project Manager- The competence of project manager has been identified as the most important factor for the successful realization of their project. The technical and administrative skills of the project manager, as well as his/her commitment and competence, become the most critical component during the project life cycle.

4. Project Schedule/Plan- A detailed specification of the individual action steps required for project implementation.

5. Client consultation - Communication, consultation, and active listening to all impacted parties.

6. Competence of Project Team Members- Recruitment, selection and training of the necessary personnel for the project team. The knowledge, skills, personal aims, and personal traits should be considered not only as a vital component of the overall organizational culture but also as an essential factor of the integrity and multi-functionality of the project team.

7. Quality of Suppliers and Subcontractors -In the contemporary world, it is rarely possible for one and the same organization to have capabilities and competencies in every aspect of the work required. Competence of project partnership is vital for success of project.

8. Technical tasks- Availability of the required technology and expertise to accomplish the specific technical action steps.

9. Client Acceptance- The act of "selling" the final project to its ultimate intended users.

10. Monitoring and Feedback- Timely provision of comprehensive control information at each stage in the implementation process.

11. Communication- The provision of an appropriate network and necessary data to all key actors in the project implementation.

12. Troubleshooting- Ability to handle unexpected crises and deviations from plan (Schultz, Slevin and Pinto, 1987 cited in Fortune and White, 2006).

2.7 Critical Success Factors for Construction Projects

Preliminary study on Critical Success Factors (CSFs) and the relationship between various attributes are essentially needed in identifying the project success. The important critical success factors will have direct impact on a construction project. All industries nowadays are dynamic and the construction industry is not excluded. In fact, construction projects involve in one of the most vibrant and complex environment. The increasing of uncertainties in technology, budget and development process create a dynamic construction industry (Salleh, 2009). Most of the players are expected to participate extensively to achieve the goals. Projects which cannot attain the aims shall cause negative impact to the clients, contractors and others.

Numerous lists and models of Critical Success Factors (CSFs) have been proposed in the literature by many researchers (Belassi and Tukel, 1996). Since the 1950s, project scheduling problems based on the assumption that the development of better scheduling techniques would result in better management and thus the successful completion of projects has been focused by most of the work in project management (Belassi and Tukel, 1996).

There are four separate dimensions of CSFs in project success (Sadeh, Dvir and Shenhar, 2000). The first dimension is meeting design's goals which refer to the contract that is signed with the client. The second dimension is the benefit to the end users which refers to the benefit to the customers from the project end products. The third dimension is benefit to the developing organization and refers to the benefit gained by the developing organization as a result of executing the project. The last dimension is the benefit to the national technological infrastructure, as well as, to the technological infrastructure of the firm that is engaged in the development process. The combination of all these dimensions gives the overall assessment of project success (Sadeh, Dvir and Shenhar, 2000).

On the other hand, four dimensions of success with a timeframe of expected results have been studied (Steinfort and Walker, 2007). The first dimension has a short term goal of project efficiency which is meeting cost time goals. While, the second dimension has a medium term goal of customer success which is meeting a technical specifications, functional performance

solving customer's problem that triggered the project right outcomes. The third dimension has a long term goal of business success in commercial success and gaining increased market share that for aid projects could be generating confidence, satisfaction and also influence. Finally, the fourth dimension has a very long term goal of preparing for the future in developing new tools, techniques, products, markets etc (Steinfort and Walker, 2007).

Besides, the factors analysis reveals nine underlying cluster namely: (i) safety and quality; (ii) past performance; (iii) environment; (iv) management and technical aspects; (v) resource; (vi) organization; (vii) experience; (viii) size/type of previous projects; and (ix) finance (Alzahrani and Emsley, 2013). Factors such as turnover history, quality policy, adequacy of labor and plant resource, waste disposal, size of past project completed, and company image are most significant factors affecting project success. Hence, this paper is set to explore the success criteria and their success factor that influence those criteria to achieve project success (Alzahrani and Emsley, 2013).

The study of project success and the critical success factors (CSFs) are considered to be a means to improve the effectiveness of a project. The measurement of success factors has been proposed into five main groups namely project management action; project procedures; project related factors; human related factors; and external environment (Chan, 2004). The five main groups of success factors have discussed about cost, time, quality, management, technology, safety, organization and environment in the construction project (Chan, 2004).

The success criteria for a construction project is not only evaluating the cost, time and quality as a success factors but also including the successfulness of project management, organizational success and the customer satisfaction (Siguroursan, 2009). Another perspective was stated were the importance of organizational planning effort, project manger's commitment and safety precaution in order to complete the construction project complete by meeting cost, meeting on time, follow the schedule accurately and meeting the quality needed to ensure the project success (Salleh, 2009). Reviewing of the relevant literature suggests that different criteria were hypothesized by different researchers.

Various authors have identified a number of CSFs for projects. A review of the literature highlights nine common CSFs for projects:

*Project Understanding***:** It is important that the project team understand the project, particularly with respect to project goals and objectives. Understanding the project mission is the most important factor related to project success (Pinto and Slevin, 2008).

*Top Management Support***:** Management support for projects has long been considered of great importance in distinguishing between success and failure (Morris and Hough, 2007; Hartman and Ashrafi, 2006). Project management is dependent on top management for authority, direction and support. Top management should make it clear that the project is worthwhile and that they support it (Hartman and Ashrafi, 2006). Interestingly, many upper managers are unaware of how their behavior influences project success (Couillard, 2005).

*Communication***:** Effective communication is vital in creating an atmosphere for achieving project success (Gioia, 2006). Communication is not only essential within the project team, but also between the team and the rest of the organization and the client (Pinto and Slevin, 2008).
*Client Involvement***:** Client involvement and consultation in the project delivery is important to project success (Morris and Hough, 2007; Couillard, 2005). For a successful project the user must be strongly committed to the project goals and be involved in the project management process (Morris and Hough, 2007).

Competent Project Team: The competence of the project manager and project team members is a critical factor for project success (Couillard, 2005). It is important that the project manager and project team be selected wisely to ensure they have the necessary skills and commitment to perform their functions effectively.

Authority of the Project Manager: In successful projects the project manager is not only strongly committed to meeting project objectives, but also has the authority to have control over developing plans, making changes as required, and fulfilling them (Hartman and Ashrafi, 2006).
*Realistic Cost and Time Estimates***:** Realistic and accurate cost and time estimates are critical to project success (Gioia, 2006).

Adequate Project Control: Successful projects have good control and reporting systems that provide adequate monitoring and feedback that enables comparison of team performance and project goals (Hartman and Ashrafi, 2006). Adequate monitoring and feedback mechanisms give

the project manager the ability to anticipate problems, oversee corrective measures, and ensure that no deficiencies are overlooked (Gioia, 2006; Couillard, 2005).

Problem Solving Abilities: Regardless of how carefully a project is planned, it is impossible to foresee every problem that could arise. It is vital that the project team is responsive and capable of taking appropriate action when problems develop (Couillard, 2005)

2.8 Significance of Critical Success Factors

Critical success factors (CSFs) can reduce organizational ambiguity. Developing and communicating a set of CSFs can reduce the dependence on the perceived aims of the organization. CSFs reflect the implicit, collective drivers of key managers and as a result are a more dependable and independent articulation of the organization's key performance areas (Salleh, 2009). CSFs 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 toward its mission. However, if the goals are poorly articulated or developed, this is not guaranteed. CSFs are reflective of what good managers do well to move the organization toward its mission, regardless of the quality of the goals that have been set (Adam and Brandt, 2003).

CSFs are the essential areas of activity that must be performed well to achieve the mission, objectives or goals for business or project. By identifying Critical Success Factors, you can create a common point of reference to help you direct and measure the success of your business or project. CSFs help everyone in the team to know exactly what's most important. And this helps people perform their own work in the right context and so pull together towards the same overall aims ((Albert and Chan, 2010; Shenhar, Dvir and Maltz, 2001).

CSFs 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, CSFs are likely to be more dynamic and to reflect current operating conditions because of the many sources of CSFs. CSFs provide a key risk-management perspective for the organization to consider. The risk perspective of executive-level managers is built into CSFs, so their "radar screen" is exposed to the organization as a whole (Arslan and Kivrak, 2009).

CSFs can be valuable for course correction. When CSFs are made explicit, managers often 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 CSFs 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 a consensus among top managers about what is important to measure in order to gauge the organizations success (Albert and Chan, 2010).

Involvement and commitment of top management, linking quality initiatives to customer and linking quality initiatives to supplier are found to be the most important CSFs to the construction companies. Determining critical success factors will give organization/company a competitive edge and is the bottom line of success in fulfilling the responsibility of a project management companies. This in turn will give rise to satisfied investors, professional bodies and make the project management company prosper (Steinfort and Walker, 2007).

2.9 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 (Haughey, 2014). 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 criteria 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 helps in recognizing 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 involved avoids them from sharing their failure cases. Being successful is the ultimate goal of every business activity, as well as the construction industry in order to survive in the construction environment (Haughey, 2014). 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 (Jari, 2013).

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. Failures occurred at many projects over the last decades. The search 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. The 20th century 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).

2.10 Project Quality

Quality can be defined as meeting the legal, aesthetic and functional requirements of a project. Requirements may be simple or complex, or they may be stated in terms of the end result required or as a detailed description of what is to be done. However, the quality is obtained if the stated requirements are adequate, and if the completed project conforms to the requirements (Ashokkumar, 2014; Waje and Patil, (n.d.)). Some design professionals believe that quality is measured by the aesthetics of the facilities they design. According to Ali and Wen (2011), this traditional definition of quality is based on such issues as how well a building blends into its surroundings, a building's psychological impacts on its inhabitants, the ability of a landscaping design to match the theme of adjacent structures, and the use of bold new design concepts that

capture people's imaginations (Ali and Wen, 2011). Quality can also be defined from the view point of function, by how closely the project conforms to its requirements. The concept of quality management is to ensure efforts to achieve the required level of quality for the product which are well planned and organized. However, in the construction industry, quality can be defined as meeting the requirements of the designer, constructor and regulatory agencies as well as the owner (Ashokkumar, 2014).

2.11 Importance of Quality for Construction Projects

A construction project in its life span goes through different phases. The main phases of a project can be described as: conceptual planning, feasibility study, design, procurement, construction, acceptance, operation and maintenance. Quality is one of the critical factors in the success of construction projects. Quality of construction projects is linked with proper quality management in all the phases of project life cycle. Design and construction are the two important phases of project life cycle which affect the quality outcome of construction projects significantly (Ashokkumar, 2014).

Further, quality of construction projects can be regarded as the fulfillment of expectations of the project participants by optimizing their satisfaction. It is because, since the quality outcomes of the projects are not according to required standards, faulty construction takes place. Further, the errors on construction projects occur frequently and can be costly for the contractors and owners of constructed facilities. In fact, 6-15% of construction cost is found to be wasted due to rework of defective components detected late during construction and 5% of construction cost is wasted due to rework of defective components detected during maintenance (Waje and Patil, (n.d.)). Hence, quality has become one of the most important competitive strategic tools which many construction organizations have realized it as a key to develop their building products in supporting the continuing success (Waje and Patil, (n.d.)).

2.12 Application of Quality in Construction Industry

From the perspective of a construction company, quality management in construction projects should mean maintaining the quality of construction works at the required standard so as to obtain customers' satisfaction that would bring long term competitiveness and business survival for the companies (Ashokkumar, 2014). Further, the adoption of quality in construction industry has been promoted in some literature (Chin-Keng and Abdul-Rahman, 2011; Haupt and Whiteman, 2004). The application of ISO standards has received much attention from researchers. ISO certification is nowadays a trend in most industries including construction industry (Ali and Wen, 2011).

According to study by Chin-Keng and Abdul-Rahman (2011), for the implementation of quality management in project management, the concepts of quality planning (identification of quality standards), quality assurance (evaluation of overall project performance) and quality control (monitoring of specific project results) in the quality management processes are importance. Among those, quality assurance (QA) and quality control (QC) are mostly used in construction. The quality control procedure in construction projects is based on tender documents, specifications, working drawings etc., therefore, the pre tender stage quality and standards of the work should be properly maintained. Therefore it is important to maintain quality control of the building projects from the inception of its design stage up to the completion of construction including the maintenance period (Haupt and Whiteman, 2004).

Quality Assurance (QA) is a program covering activities necessary to provide quality in the work to meet the project requirements. QA involves establishing project related policies, procedures, standards, training, guidelines, and system necessary to produce quality. QA provides protection against quality problems through early warnings of trouble ahead. Such early warnings play an important role in the prevention of both internal and external problems". On the other hand Quality Control (QC) is the specific implementation of the QA program and related activities. Effective QC reduces the possibility of changes, mistakes and omissions, which in turn result in fewer conflicts and disputes (Waje and Patil, (n.d.)). The design professionals and constructors are responsible for developing an appropriate program for each project to enhance the project quality.

2.13 Cost of Poor Quality

Construction projects are always expected to create a balance between cost, time and quality. Even though, improving quality is not always the major objective of the project; the poor quality could create cost to organization. The cost of poor quality refers to the costs associated with providing poor quality product or service. The cost due to failure, appraisal and prevention are three major cost categories that could be directed by poor quality (Haupt and Whiteman, 2004). As Haupt and Whiteman further mentioned, failure cost could be occurred as internal and external failures.

Internal failure cost includes rework, crap, re-inspection, re-testing, redesign, material review etc whilst external failure cost includes processing customer complaints, customer returns, warranty claims and repair costs, product liability and product recalls. Further, appraisal cost could incur while performing measuring, evaluating, or auditing to assure the quality conformance. These costs include first time inspection, checking, testing, process or service audits, calibration of measuring and test equipment, supplier surveillance, receipt inspection etc. The prevention cost include the costs related to all activities of preventing defects from occurring and to keep appraisal and failure to a minimum, such as, new product review, quality planning, supplier surveys, process reviews, quality improvement teams, education and training etc (Chin-Keng and Abdul-Rahman, 2011). Hence, it creates a necessity to enhance the quality of construction projects to lead them towards successful completion.

As per the extant literature, adopting quality into building process is therefore utmost important. In construction, failure can result from malfunction on the part of constructor, designer, or even owner. In most cases however, it is the result of a combination of actions by several or all of these parties. According to previous researches, the construction organization must, therefore, have the ability to deal effectively with all parties involved to make the project success with high project quality (Ashokkumar, 2014; Chin-Keng and Abdul-Rahman, 2011). The implementation of quality management plan therefore could start at the project inspection stage and should continue throughout the whole life cycle phases. Enhancing the quality of drawings, and specifications could be done at the early stages that could affect the quality in design and construction phases and, ultimately the quality of constructed facility.

Drawings are the only documents given to the constructor that show the design concept, size and scope of the job. It is critical that drawings and specifications be clear, concise, and uniform. Further, constructability of the design could improve as it affects the quality of design. The design should be reviewed for effectiveness and compatibility with local requirements, including both the initial construction and post construction operations (Chin-Keng and Abdul-Rahman, 2011). Both the initial design constructability and the completed operational design should also be reviewed.

Providing quality training for construction related professionals who have engaged in construction could also effect to enhance project quality. Here, the awareness and training of quality management aspects relating to whole phases is essential. In addition to that, all the parties should be work together as a team in the quality management process to achieve certain quality goals. Partnering arrangements between those parties will enhance the total quality.

2.14 Project Success in terms of Time

Schedule delay can be defined as a discrepancy where actual completion of the project exceeds the planed period according to the contract (Chabota et al., 2008). According to Chabota et al., project schedule is characterized by client urgent demand of project completion, client preference of speed over cost and quality, and the balance of project managers among project scope, budget and resource available.

The project success is divided into four dimensions of time-dependent (Shenhar, et al., 2001). The first dimension is the period during project execution and right after project completion such as completion on time and budget. The second dimension can be assessed after a short time when the project has been delivered to the customer and it is focused more about satisfaction, functional of product and technical specifications. While, the third dimension can be assessed after a significant level of sales has been achieved in one to two years and it will show the organization performances. The last dimension can only be assessed three to five years after project completion, it about preparing for the future (Shenhar, et al., 2001). The other perspective and with different way to show a success criteria is found from the paper ‘Criteria of Project Success: an exploratory re-examination’, the project success should be viewed from different perspectives of the individual owner, developer, contractor, user, and the general public (Lim and Mohamed, 1999). The success criteria of project success are divided into two categories such

as the micro and macro viewpoint. The micro viewpoint is measured on time, cost, quality, performance and safety while the macro viewpoint is measured on time, satisfaction, utility and operation (Lim and Mohamed, 1999).

In the technical article on "Project Success Attributes", the tools that would allow team members and client personnel to formalize the way they evaluate project success has been introduced (Parviz and Rad, 2003). Project success attributes of the article viewed on the management issues of thing and people. Management of thing issues are achieved cost against budget, schedule on time, quality and scope as needed etc. Management of people issues are related to productivity, cooperation, responsibilities and client satisfaction (Parviz and Rad, 2003).

2.15 Technical Framework

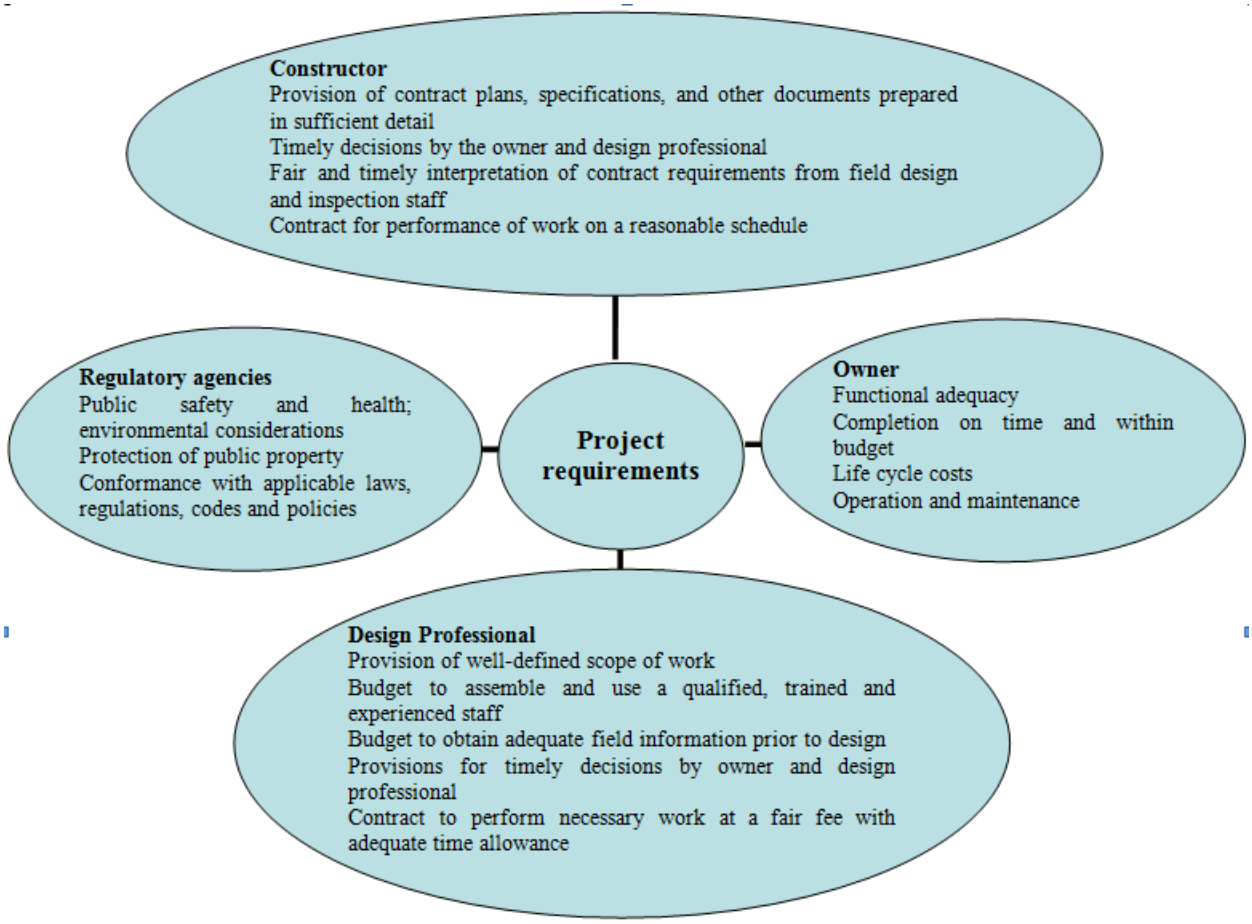

Figure 2: Project requirements

(Source: Ferguson and Clayton (1988). Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors)

Establishing project requirements at the project inception stage could affect the quality of completed project. As Ashokkumar (2014) mentioned that, quality of any construction project is meeting the requirements of the designer, constructor and regulatory agencies as well as the owner. Figure 1, above, illustrates the project requirements of the designer, constructor, regulatory agencies and the owner, that could be meet by enhancing the project quality as found in literature.

Accordingly, a careful balance between the owner's requirements of the project costs and schedule, desired operating characteristics, materials of construction, etc. and the design professional's need for adequate time and budget to meet those requirements during the design process is essential. Owners balance their requirements against economic considerations and, in some cases, against chance of failure (Ferguson and Clayton, 1988). The design professional is obligated to protect public health and safety in the context of the final completed project.

The constructor is responsible for the means, methods, techniques, sequences, and procedures of construction, as well as safety precautions and programs during the construction process (Ferguson and Clayton, 1988; Kazaz and Birgonul, 2005). The completion of project in accordance with the project requirements could be assured by the quality of its construction. Project requirements are the key main factors influencing construction project quality. However, it can be influenced by many factors.

According to a study by Ali and Wen (2011), management commitment and leadership in construction organizations could affect construction quality. It is because, the poor management practices directly and indirectly lead to decline of construction productivity and ultimately affect on project quality. In construction terms, cost, schedule, and possibly quality goals are established for each project. Project managers are rewarded on the basis of meeting these goals (Iyer and Jha, 2005). Further, the quality teams provide companies with the structured environment necessary for successfully implementing and continuously applying the quality in construction (Iyer and Jha, 2005). As Iyer and Jha further stated, extent of teamwork of parties participating in the design phase is found to be the most important factor that affects quality teamwork among parties such as structural engineers, electrical engineers, environmental engineers, civil engineers, architects, and owners is essential to reach the quality goals for design. Further, in the construction phase, extent of teamwork of parties participating in the construction process is found to be very important. Any ad-hoc planning may lead to the

consequences of not meeting deadlines and thereby increasing cost, which in turn affects the quality of the project (Albert and Chan, 2010).

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter presents methodological issues such as the research design, sampling techniques and sample size, data collection instruments, method of data analysis and ethical considerations.

3.1 Study Design

The study was discriptive in nature and utilized a survey methodology for data collection. The research was exploratory because it tried to explore the major determinants of building construction projects' success/failure in terms of quality, cost and time in 19 woredas of Jimma. Zone including Jimma Administrative City and into 41 project sites. The research also adopted a combination of both quantitative and qualitative approaches. The primary data was obtained with the use of structured questionnaires (quantitative) and selected interviews and observations (qualitative) for possible mitigation measures. The combination of quantitative with qualitative methods of data collection in research has become a common practice in recent years for greater understanding and validation of results (Bryman, 2006).

3.2 Sampling Technique and Sample Size

The sampling frame for this study was determined to include 19 woredas in Jimma Zone. The sampling frame was developed using comprehensive sampling in order to include all government sector organizations in these woredas. Next, using purposive sampling technique, 120 respondents with some knowledge of the project management and implementation practices within their organizations, based on their job position or function, were selected as questionnaire respondents. Stakeholders such as: project managers, professional designers, engineers, contractors, sub-contractors, consultants, technical personnel, finance and economic bureau heads, municipal authorities, woreda administrators, and few knowledgeable clients are selected as source of data given that they were the main providers and recipients of the building construction projects performance processes.

3.3 Data Collection Instruments

Data were gathered using various tools and instruments including survey questionnaire, key informant interview, document investigation and field observation.

3.3.1 Questionnaire

The survey questionnaire was composed of 32 questions which were grouped into three main themes, these were: quality specification, cost notification and time schedules. In each case the items focused on managerial issues, organizational factors, project system and project Control. Each category (quality, cost, time criteria) contained topic related questions that helped to obtain relevant information up on the indicators respectively.

For the survey, pretested questionnaire was developed to assess determinants of building construction project. Pilot questionnaires were sent to ten professionals selected from Jimma town for their comment and adjustment. Their comments and inputs were incorporated in development of the final questionnaire that was distributed for the actual data collection.

3.3.2 Key-Informant Interview

Key informant interviews was conducted using semi-structured questions for 2 senior professionals in the construction sector, 2 zonal level authorized consultants and 2 clients (project owners) obtained from relatively big towns (such as Jimma and Agaro),

3.3.3 Document Investigation

Available sample documents about building construction agreements, quality specifications, project cost and time were also included as source of relevant information perhaps these written documents could help to obtain additional information and triangulation of the data. Another importance of documents was that they helped to consolidate the literature review and gain experience from past researches about how to step further towards feasible recommendation points.

3.3.4 Field Observation

Construction sites were also considered as source to gain feedback about the actual quality of building constructions and helped to cross-check the existing quality with written statements. Observation check-list was prepared and the assistance of qualified engineer was collaborated in this field visit in few selected sample sites.

3.4 Method of Data Analysis

Selecting appropriate data analysis method is central point in any research process. Hence, data that was collected through quantitative and qualitative instruments were organized according to the relationship they had in answering the proposed research questions. Regarding the quantitative data, responses were categorized and tallied before presentation, analysis and interpretation of the data was made. Regression analysis was made to the relationships among variables while descriptive statistical procedure was utilized to summarize statistical variables in tables and calculate standardized values, which helped the score transformation places variables on common scale for easier visual comparisons.

The researcher used percentage to analyze and summarize the identification (demographic) information of the respondents, and to compare some part of the basic data. The mean and the standard deviation as well as the spearman rank correlation coefficient of different variables was calculated using SPSS version 20.00 to identify and show significant differences among the responses in the basic data with separate statistical summary tables for measuring the values within different indicator categories. While mean and average mean values were employed to calculate the central tendency of the summative Likert response data, standard deviation (S.D.) was used for determining variances among respondents' views throughout the summative Likert response data, i.e., to analyze variability of each respondent's opinion in his/her response.

For simplicity of analysis and interpretation, the researcher uses 3.0 as expected average mean value; thus, indicators for determinants of building construction projects with an obtainable mean scales, $\leq$ 1.49 = poor; 1.5 -to- 2.49 = fair; 2.5 – to - 3.49 = good; 3.5 – to - 4.49 = very good; and $\geq$ 4.5 = excellent. The frame of reference for this analysis was borrowed from Albaum (2007).

The five point scale is finally converted to a Relative Importance Index (RII) for each individual factor using the following formula:

$$\text{Relative Importance Index (RII)} = \frac{\sum w}{H * N}$$

Where, w is the total weight given to each factor by the respondents, which ranges from 1 to 5 and is calculated by an addition of the various weightings given to a factor by the entire respondent, H is the highest ranking available (i.e. 5 in this case) and N is the total number of respondents that have answered the question. Finally, statistical test is conducted on specification

of quality, cost and time control ranking agreement or disagreement among the respondents with the help of spearman rank correlation coefficient for the basic research questions.

In addition to this, a narrative analysis will be used to examine the legal frame governing the relationship of the qualitative data, which is obtained through semi-structured interview. The qualitative data, obtained with the means of key-informant interview, document investigation and field observation will be analyzed using certain preliminary procedures such as: data reduction, data display, and verification. Data reduction is made to scrutinize about the relevant information from irrelevant amongst the crude nature of the data; data display, to make precision of research related information for the audience; and verification, to materialize the relationship of the qualitative data properly answering the research questions.

Unlike the quantitative data, in which data collection is generally compiled in figures, the qualitative data analysis was presented in a descriptive fashion. Hence, data from different sources obtained by different procedures were reviewed line by line in detail as the concept of investigation becomes clearly understood.

3.5 Ethical Considerations

In conducting this research study, emphasis was given to every important ethical issue. Before commencement of the actual activities, ethical clearance was obtained from Jimma University. Prior to entering into the actual data collection procedure, the consent of Jimma Zone Administration was obtained through a formal letter. Then, the letter was submitted to the administrative bodies of woredas as well as municipality officials of Jimma and Agaro Towns and other sector offices of the woredas who were assumed to collaborate with the researcher over the issue under investigation. A good rapport was created at the same time with each data contributor. Similar procedure will be followed while the researcher moves from one interviewee to another within the study areas. In addition, people were participated with their full consents. Every effort was made to keep participants anonymous, and confidentiality was kept throughout the data procedure. Meanwhile, every source that was used in the study was acknowledged in proper manner.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1 Introduction

The data on determinants of building construction were obtained from 41 construction sites maintained in the study area. 120 participants were involved to respond on questionnaire format. The study employed different statistical techniques aided by SPSS to determine the success of building construction projects in Jimma Zone. This chapter describes the analysis. The findings relate to the research questions that guided the study. The chapter begins with the analysis of the response rate and then explains reliability techniques adopted by the study. Reliability analysis was carried out using Cronbach's alpha which is a coefficient of reliability that gives an unbiased estimate of data generalizability. Finally the regression analysis technique were employed to identify how the critical success factors such as quality, time and cost determine the success of building construction projects in the study areas.

4.1.1. Response rate

The number of questionnaires that were administered was one hundred thirty (130). A total of one hundred twenty questionnaires were properly filled and returned. This represented an overall successful response rate 92.3%. The remaining 7.7% failed to properly fill the questionnaires and some declined returning them. Babbie (2004) asserted that return rates of 50% are acceptable to analyze and publish, 60% is good and 70% is very good. The achieved response rate was more than 70% which implied that the response rate was very good. The response rate is presented on table 4.1.

Table 4.1 Response Rate

Response	Frequency	Percentage
Successful	120	92.3%
Unsuccessful	10	7.7%
Total	130	100%

4.2. Reliability (Cronbach's Alpha) test of the study

According to Field (2009) measurement is an essential concept in science, forming the basis of all statistical research. In most cases, the uncertainties of measurement are related to validity and reliability. According to Field (2009), reliability is a characteristic of scores, not tests instruments. One of the methods to estimate the reliability of the scores on a test or

measurements is Cronbach's coefficients alpha method. Hence, Cronbach's coefficients alpha refers to the extent to which there is interrelatedness among the responses to the multiple items comprising in the Likert scale. Hence, as explored by Field (2009), if Alpha Coefficients were above 0.70, consistency and suitability were considered high. Thus, as shown in table 4.4 that the reliability of the scores was evident by strong Cronbach's alpha coefficients for all variables that used as independent and dependent of the study.

Table 4.2: Cronbach's Alpha for all Variables

FACTORS	**Cronbach's Alpha**
Quality Specification	0.823
Cost Notification	0.809
Time Schedules	0.842

4.3. Ranking of Success Factors in Building Construction Projects Based on Their Categories

The Relative Importance Index (RII) is a statistical method which is used to determine the ranking of different project success factors. As this survey was designed to investigate the relative importance of various major success factors, the method was adopted in this study within various groups. The RII of Likert five-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree) was adopted and transformed the relative importance indices' for each success factors

Project management action is a key for project success. Competent project managers can use management tools to plan and execute their construction projects to maximize the project's chances of success. A successful project is one that is delivered on time; cost and quality have been recognized as important elements of project success.

In order to investigate the major success factors related to building construction project the responded questionnaires was analyzed by using SPSS v23. The following tables indicate the output of the analysis with quality specification related factors. As we have seen from table 4.3 below; building projects accomplished with low level of quality (RII=0.891) took the first rank, observe many construction projects problems particularly determined by quality specification (RII=0.872) took the second rank; collaborating to reach the required quality of building

constructions (RII=0.842) took the third rank over the other success factors in Jimma zone building construction projects. Therefore the one who is assigned as a project manager should have the building projects accomplished; observe many construction projects, and quality of building constructions in order to the project completed successfully.

4.3.1 Quality specification related factors to building construction project in jimma zone

Table 4.3: Quality specification related factors to building construction project in jimma zone

Quality Specification	1	2	3	4	5	Mean	SD	RII
I know, construction projects are usually completed through a combination of many planned and unplanned events	2	19	17	55	27	3.72	1.038	0.743
Construction projects always accomplished with expected balance between cost, time and quality	16	21	11	49	23	3.42	1.590	0.670
As I know, high quality is not always the primary objective for the client	6	23	18	53	20	3.48	1.130	0.672
An appropriate level of quality is usually determined by contractors during au phases of building projects	1	26	20	49	24	3.57	1.066	0.675
I usually observe some building projects accomplished with low level of quality	0	12	10	57	41	4.06	.910	0.891
I observe many construction projects problems particularly determined by quality specification	1	11	17	51	40	3.98	.961	0.872
Project manager's ignorance and lack of knowledge are critical determinates for quality of projects in jimma zone	1	19	13	54	33	3.82	1.034	0.820
Poor human resource management a factor the quality of building construction in Jimma zone.		25	8	59	29	3.76	1.105	0.801
The completion of building construction projects accord with project requirements assuring the construction quality	5	34	17	52	12	3.27	1.045	0.640
Management commitment and leadership usually affect construction quality in Jimma zone	1	27	17	32	43	3.74	1.191	0783.
Quality teams usually provide contractors with structured environment necessary for successfully implementing and continually applying the quality of building projects	2	27	20	54	17	3.48	.977	0.641
The extent of team work of parties participating in the design phase is usually found as the determinant that affects the quality of building constructions	1	23	6	47	43	3.69	1.118	0.692
Project participants such as structural engineer, electrical engineer, environmental engineer, civil engineer, architect and owner are collaborating to reach the required quality of building constructions.	2	16	21	59	22	3.90	1.066	0.842

Scope of services is a critical determinant for the failure of building construction projects in Jimma zone	1	26	20	49	24	3.57	1.044	0.677
Project stakeholders initially clearly define the intended goals and general directions of the building construction projects	3	25	9	64	19	3.59	1.065	0.678
Recruitment and selection of the necessary personal is significant experience for the integrity and multi-functionality of building project teams to think project quality	1	22	14	55	28	3.73	1.044	0.723

As indicated in table 4.3 that the average means of respondents' factors in building construction projects based on quality specification items were ranging from 3.27 to 4.06, with standard deviation ranges from 0.910 to 1.118. The overall mean of building construction projects factors for the sixteen questions can be estimated to 3.53 which is good. The highest standard deviation of the response was calculated for question number 12 which is team work of parties participating in the design place is usually found as the determinant that affects the quality of building constructions. The highest mean of 4.06 indicated in Table 4.3 confirmed that the majority of respondents agree that building projects accomplished with low level of quality.

Regarding quality, most important results were observed with variables such as: some building projects accomplished with low level of quality (mean = 4.06 and a corresponding S.D. = 0.910); many construction projects problems particularly determined by quality specification (mean = 3.98 and a corresponding S.D. = 0.961). Contrary to these, project participants such as structural engineer, electrical engineer, environmental engineer, civil engineer, architect and owner are collaborating to reach the required quality of building constructions (mean = 3.90 and a corresponding S.D. = 1.066).

Other significant values were seen with indicators such as: Project manager's ignorance and lack of knowledge are critical determinates for quality of projects in Jimma zone (mean = 3.82 and a corresponding S.D. = 1.054); followed by other significant value registered for poor human resource management a factor the quality of building construction in Jimma zone (mean = 3.76 and a corresponding S.D. = 1.105); management commitment and leadership usually affect construction quality in Jimma zone (mean = 3.74 and a corresponding S.D. = 1.191).

On the other hand, recruitment and selection of the necessary personal is significant experience for the integrity and multi-functionality of building project teams to think project quality (mean = 3.73 and a corresponding S.D. = 1.044) while construction projects are usually completed through a combination of many planned and unplanned events (mean = 3.72 and a corresponding

S.D. = 1.038) and the extent of team work of parties participating in the design phase is usually found as the determinant that affects the quality of building constructions (mean = 3.69 and a corresponding S.D. = 1.118).

Table 4.4, below, showed that the output of the analysis with cost notification related factors. As we have seen from table 4.4 below; construction projects which are not succeeded due to budget constraints (RII=0.89) took the first rank, quality of building construction is highly determined by financial and technical experience (RII=0.82) took the second rank; lack of top management support is a critical success factor affecting the cost of building construction (RII=0.747) took the third rank over the other success factors in Jimma zone building construction projects. Therefore the one who is assigned as a project manager should haveassign budget constraints, financial and technical experience, and assign top management supportin order to complete the project successfully.

4.3.2 Cost Notification related factors to building construction project in jimma zone

Table 4.4: Cost Notification related factors to building construction project in Jimma zone

Cost Notification	1	2	3	4	5	Mea	SD	RII
I know, there are construction projects which are not succeeded due to budget constraints	0	15	7	56	42	4.04	.956	0.89
Quality of building construction in jimma zone is highly determined by financial and technical experience	1	16	16	64	23	3.77	.941	0.82
Owners usually balance their requirements against economic considerations	4	23	13	60	20	3.57	1.082	0.650
Project size is a factor for the failure of building construction projects in Jimma zone	10	32	12	49	17	3.26	1.233	0.620
Sophistication of the owner related to the design of facilities usually determine the success of building construction projects in Jimma zone	4	22	18	62	14	3.50	1.028	0.654
Technological implications are critical success factor affecting the design of quality buildings	1	23	6	47	43	3.59	1.184	0.670
A well planned project schedule is a critical success factor affecting the cost of building construction projects in Jimma zone	3	24	6	61	26	3.69	1.098	0.607

Lack of top management support is a critical success factor affecting the cost of building construction in Jimma zone	2	27	6	53	32	3.72	1.138	0.747
Top management support to provide the necessary resources is flexible and adequate for effectively executing building construction in jimma zone	4	23	20	59	14	3.47	1.036	0.601

As indicated in table 4.4 that the average means of respondents' factors in building construction projects based on Cost Notification items were ranging from 3.26 to 4.04, with standard deviation ranges from 0.941 to 1.233. The overall mean of building construction projects factors for the nine questions can be estimated to 3.58 which is also good. The highest standard deviation of the response was calculated for question number 4 which is project size is a factor for the failure of building construction projects in Jimma zone. The highest mean of 4.04 indicated in Table 4.3 confirmed that the majority of respondents agree that construction projects which are not succeeded due to budget constraints.

Regarding indicators of cost, the most significant results were obtained in terms of issues such as: there are construction projects which are not succeeded due to budget constraints (mean = 4.04 and a corresponding S.D. = 0.956); quality of building construction in Jimma Zone is highly determined by financial and technical experience (mean = 3.77 and a corresponding S.D. = 0.941); lack of top management support is a critical success factor affecting the cost of building construction in Jimma zone (mean = 3.72 and a corresponding S.D. = 1..138); a well planned project schedule is a critical success factor affecting the cost of building construction projects in Jimma zone (mean = 3.69 and a corresponding S.D. = 1..098); technological implications are critical success factor affecting the design of quality buildings, which directly related to cost (affording ability) (mean = 3.59 and a corresponding S.D. = 1..184); and owners usually balance their requirements against economic considerations (mean = 3.57 and a corresponding S.D. = 1..082).

Next, Table 4.5 showed that the output of the analysis with Time Schedules related factors. As we have seen from table 4.5, below, construction projects which are not completed on scheduled time (RII=0.857) took the first rank, project completion time has been closely related specifications and contractors qualification (RII=0.832) took the second rank; building projects are frequently influenced by success factors (RII=0.801) took the third rank over the other success factors in Jimma zone building construction projects. Therefore, the one who is assigned

as a project manager should manage time to complete the construction projects on time, assign contractors for proper specifications and qualification of the project and identify frequently influencing factors in order to complete the project successfully.

4.3.3 Time Schedules related factors to building construction project in jimma zone

Table 4.5: Time Schedules related factors to building construction project in Jimma zone

Time Schedules	1	2	3	4	5	Mean	SD	RII
Building projects are frequently influenced by success factors		9	44	37	30	3.73	.923	0.801
I know, there are construction projects which are not completed on scheduled time	2	14	5	54	45	4.05	1.019	0.857
Delay in project completion time has been closely related specifications and contractors qualification	3	36	18	49	14	3.83	.876	0.832
Owners competence is a critical factor for the failure of schedule performance in jimma zone	3	19	16	57	25	3.68	1.053	0.742
The competence of project managers is significant to efficiently and effectively executing building constructions in Jimma zone	3	32	12	52	21	3.47	1.137	0.753
A detailed specification of the individual action steps are significant in timely completing building construction projects in Jimma zone	0	21	20	51	28	3.72	1.014	0.761
Competence of project partnership(suppliers and sub-contractors) is a cause for the failure of building construction projects in Jimma zone	3	36	18	49	14	3.29	1.095	0.672

As indicated in table 4.5 that the average means of respondents' factors in building construction projects based on Time Schedules items were ranging from 3.29 to 4.05, with standard deviation ranges from 0.876 to 1.137. The overall mean of building construction projects factors for the seen questions could be estimated to 3.62 which is also good. The highest standard deviation of the response was calculated for question number 5 which is the competence of project managers is significant to efficiently and effectively executing building constructions in Jimma zone. The highest mean of 4.05 indicated in Table 4.4 confirmed that the majority of respondents agree that the construction projects which are not completed on scheduled time.

Accordingly, the most significant values for time indicators were perceived in terms of issues such as: there are construction projects which are not completed on scheduled time (mean = 4.05

and a corresponding S.D. = 1.019); delay in project completion time has been closely related specifications and contractors qualification (mean = 3.83 and a corresponding S.D. = 0.876); building projects are frequently influenced by success factors (mean = 3.73 and a corresponding S.D. = 0.923); a detailed specification of the individual action steps are significant in timely completing building construction projects in Jimma zone (mean = 3.72 and a corresponding S.D. = 1.014); and owners competence is a critical factor for the failure of schedule performance in Jimma Zone (mean = 3.68 and a corresponding S.D. = 1.053).

4.4. Multi-collinearity

Further to the reliability tests a multi-collinearity test was done at the pilot stage to ensure that the accepted independent variables did not exhibit collinearity amongst themselves. A situation in which there is a high degree of association between independent variables is said to be a problem of multi-collinearity which results into large standard errors of the coefficients associated with the affected variables. According to Mugenda and Mugenda (2012), multi-collinearity can occur in multiple regression models in which some of the independent variables are significantly correlated among themselves.

In a regression model that best fits the data, independent variables correlate highly with dependent variables but correlate, at most, minimally with each other. This problem was solved by ensuring that there was a large enough sample as multi-colinearity is not known to exist in large samples. Multi-collinearity can also be solved by deleting one of the highly correlated variables and re-computing the regression equation. From table 4.11, the tolerances are all above 0.2. If a variable has collinearity tolerance below 0.2, it implies that 80% of its variance is shared with some other independent variables.

Myers (1990) also postulates that a VIF (Variance Inflation Factor) value greater than 10 calls for concern. As indicated in table 4.6, there is no existence of multi-collinearity problem among the explanatory variables as tolerance values are greater than 0.2 and VIF values less than 10.

Table 4.6: Relationship among independent Variables

Factors	**Coefficients**	**T**	**Sig.**	**Collinearity Statistics**	
				Tolerance	**VIF**
Quality Specification	.471	7.730	.000	.899	1.113

Cost Notification	.478	8.013	.000	.939	1.065
Time Schedules	.155	2.481	.015	.859	1.164

4.5 Normality Test

For one to fit a linear model to some given data, the dependent variable (success of building construction) has to be normally distributed (Ghasemi &Zahedias 2012).

4.5.1 Q-Q Plot

For data to be normally distributed, the observed values should be spread along the straight diagonal line shown in figure 4.1. Since most of the observed values are spread very close to the straight line, there is high likelihood that the data are normally distributed. This finding is confirmed by the Q-Q plot test below.

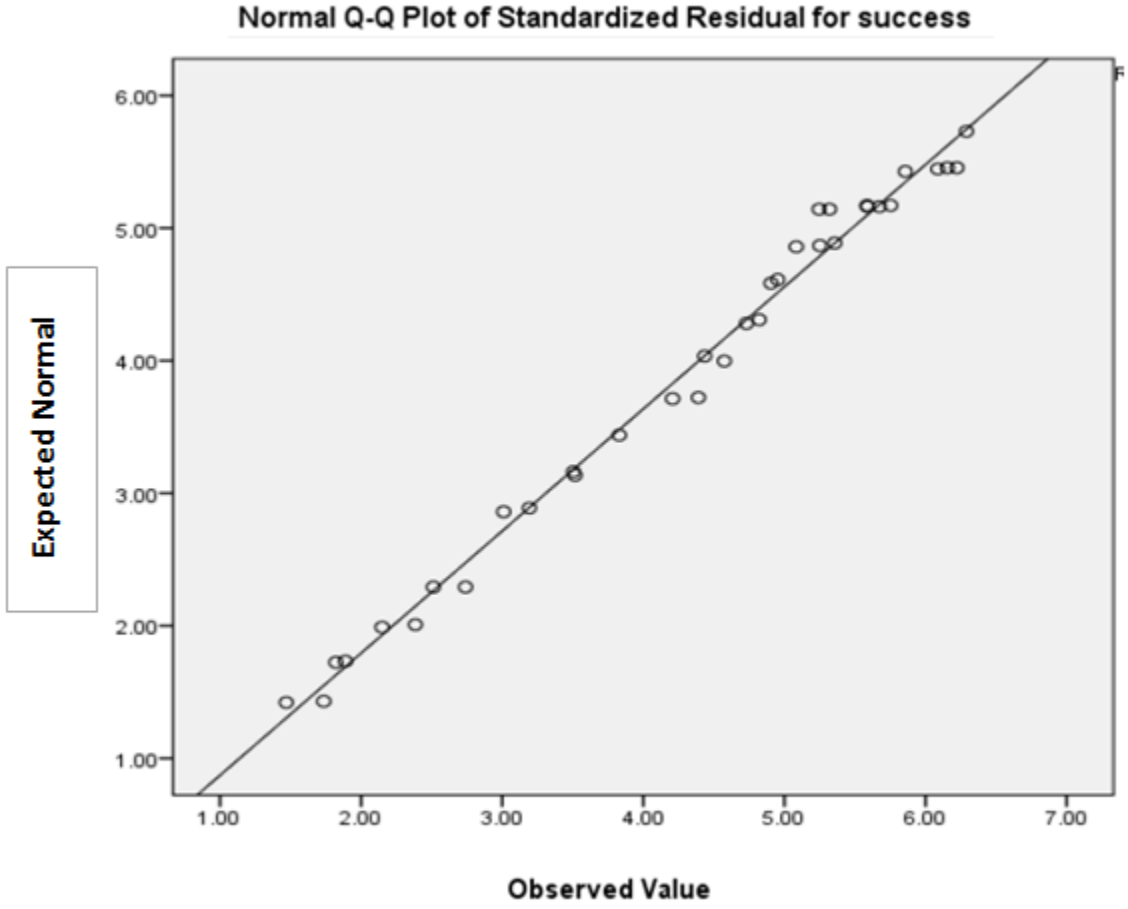

Figure 3. Normal Q-Q Plot of success of building construction project

4.5.2 Kolgomorov-Smirnov test

The Kolgomorov-Smirnov test is a non-parametric test that can be used to test the underlying distribution of a given random variable. This was used to test whether the dependent variable followed a normal distribution.

From table 4.7 the Shapiro-Wilk statistic 0.061 has a p-value of 0.02 which is less than 0.05. with 95% confidence, the study concluded that the dependent variable success of building construction followed a normal distributed. Fitting a linear model to the data was thus justified.

Table 4. 7 Normality Test

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for success	.061	120	.0200*	.964	120	.003

4.6. Regression Analysis

The study further carried out regression analysis to identify how the critical success factors such as quality, time and cost determine the success of building construction projects in the study area.

According to Green and Salkind (2003), regression analysis is a statistics process of estimating the relationship between variables. Regression analysis helps in generating equation that describes the statistics relationship between one or more predictor variables and the response variable. The regression analysis results were presented using a scatter plot diagrams, regression model summary tables, Analysis Of Variance (ANOVA) table and beta coefficients tables. The ordinal categorical data collected for each variable was scored to produce total scores for each variable that was then used for regression analysis.

4.6.1. Regression Analysis on influencing factor Success of building construction

Regression analysis was conducted to determine the significance relationship of influencing factors against success of building construction.

Table 4.8 presents the regression model on influencing factors versus success of building construction project. As presented in the table, the coefficient of determination R square is 0.612 and R is 0.783. The coefficient of determination R square indicates that 61.2% of the variation on the success of building construction projects is explained by the variation in influencing factors. The R square is high implies a good model fit. The Adjusted R square is 0.612 which is more than the R square. This implies that quality; cost and time determine 61.2% contribution for the success of building construction project the other 38.8% due to other variation or factors.

Table 4.8. Model Summary, Influencing factors

R	R Square	Adjusted R Square	Std. Error of the Estimate
.783a	.612	.602	.300

The table also presents the results of Analysis of Variance (ANOVA) on influencing factors versus success of building construction project. The ANOVA results for regression coefficients indicate that the significance of the F is 0.00 which is less than 0.05 hence implying that the predictor coefficient is at least not equal to zero. This also implies a good fit for the model..9.

Table 4.9. ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.530	3	5.510	61.096	.000[b]
	Residual	10.462	116	.090		
	Total	26.992	119			

The study further determined the beta coefficients of influencing factors versus success of building construction project. Table 4.10 also presents that the coefficient of Influencing factors; Quality, Cost and time, 0.471, 0.478, and 0.155, respectively. The t statics and p-value for these coefficients are given in table 4.10, the coefficient of all the p-value is less than 0.05. This p value confirms the significance of the coefficient of influencing factors at 95% confidence. We can thus conclude that influencing factors (cost, quality and time) significantly influences the success of building construction project and thus has a significant positive relationship with success of building construction projects.

Table 4.10 Standardized Coefficients of regression analysis

Model		Beta	t	Sig.
1	(Constant)		-3.189	.002
	quality	.471	7.730	.000
	cost	.478	8.013	.000
	time	.155	2.481	.015

According to the consent of a construction consultant, construction project development involves numerous stakeholders many processes, different phases and stages of work and a great deal of input, with the major aim being the project to a successful conclusion. He said, starting from architectural design to project executioners different parties need to participate in a contraction project development. These parties have their own particular role specific to their responsibility and they must work in strong coherence and practical synergy for the success of the construction project.

According to contractor interviewee, success or failure for a construction project highly relies on not only on the timely accomplishments of the specific parties duties but also on the effective integration of all parties just like stick taking athletics to win or fail together. One needs to run back in order to take the stick before he runs to his front for the general success of the task (project). These determine the beginning as the same time the ending of a successful project or a failed project.

According to another contractor's view point, time is the determinant factor for a project since the construction is scheduled a head with in time framework. Efficient usage of time as per the plan critically determines for the success of the project leading the construction process effectively at each phase of the building task. As to this interviewee, lack of effective communication between stakeholders is a critical success factor for building construction projects.

From the consultant interviewee's consent, quality is the key stick to be administered in the construction process to find a durable building which indicates a projected success or failure of the project in its future value. He added saying, cost timely and enough cost must be engaged for the success of a construction project and its process. Unless failed project is the other pin. He

concluded saying, time, quality and cost, being highly interdependent, determines the success or failure of a project acting in a manner one- in- three, three- in – one just like trinity.

One client (project owner said that it is very good to explain those stakeholder's specific duties and their job description in a single building construction project in order to have deep insight. Construction consultants need to help clients make sound preparation for their upcoming projects and ensure that contractors complete the project on cost. They require to provide cost estimates draw budgets and resolve differences between contractors and project owners. This position should be suitable for architects or civil engineers.

According to contractor interviewee's point, competent construction consultants should rely on excellent plans with strong cost estimation skills. During the design stage of a building project, the constant need to study the building plan, establish a sound construction budget. He added, in the job of the construction, consultants need to prepare and issue contracts to construction companies on behalf of the project owner. After the owner receives bids firm various contractors the consultant reviews then and helps to determine the most competitive bidder.

One consultant said that during the construction process, the consultant has to serve as the projects owner's advocate. He/she ensures the contractor fulfills all the condition outlined in the contract documents. If the contract requires the contractor to use a specified quality of construction materials, the consultant verifies the quality of all purchased materials. He/she regularly inspect the project at a various phases to ensure it complies with the original design. If the contractor intends to make structural change to the project he must seek approval from the owner's consultant.

Generally, another client interviewee said, a building contractor is supposed to supervise, inspect, and direct a construction project from start to finish regardless of the project scope. The contractor is expected to apply the relevant skills and expertise to ensure success during the project development process as specified by the contract documents. In a typical building and construction project, all the three main parties — that is the project owner, the consultant, and the building contractor — involved in the project have specific roles and responsibilities, which are all crucial to the achievement of project success. Building engineers are tasked with the proper identification and implementation of the methods, techniques, sequences, and procedures of construction as indicated in and necessitated by the construction contract. The building contractor ensures that the entire project complies with all the specifications as outlined in the

contract documents. As such, contractor has more than a dozen different responsibilities. But you can still combine some of the related duties and obligations to create the major responsibilities of a building contractor.

As mentioned above, the contractor is responsible for the supervision and superintendence of all the work in a project site. To successfully manage all the intricate elements that make up a project ecosystem, the contractor should plan ahead on all the crucial project development and implementation details. This involves identifying and estimating various project issues like the personnel needs, the required materials and equipment, forecasting any potential project changes, highlighting all legal and regulatory issues and requirements, outlining an effective safety policy, and implementing a reliable communication strategy between all project stakeholders, client interviewee said.

From the common consensus of the consultant interviewees, before launching the project, the contractor should be equipped with enough resources to complete the first phase of the construction process. Using the information and estimates created during the planning stage, the contractor should request adequate funds from the project owner to furnish all project needs. Basic project needs include a competent and skilled workforce for various general and specialized tasks, licensed subcontractors to handle various specialized crafts and trades, supply of enough construction materials, and the deployment of all the required construction equipment.

According to one construction consultant, the construction contractor in a project is responsible for the successful completion of the project in terms of time schedule, cost, safety, and other project-related details as stipulated in the project contract. The contractor is supposed to set and observe the project progress schedule and budget in line with the owner's demands; and also to adhere to the time and cost stipulations. The project progress schedule can be altered by unprecedented changes and adjustments during the project execution phase. He added, the project management role extends to the project handover stage, which is characterized by warranties and guarantees, for quality assurance purposes.

A client informant said that company's financial strength, effective scheduling and effective site management plus client consultation and support were critical success factors in building construction projects. The contractor is responsible for the project's compliance with all the necessary legal and regulatory requirements. This means that the contractor has to obtain or acquire all the necessary permits before proceeding with the project. There is also the issue of

paying patent fees and royalties for any use or application of inventions, designs, processes, products, and/or devices, which are subject to patent rights or copyright fees. The contractor must also pay tax in accordance with the set of state and federal laws and regulations.

According to reviewed contract document, the construction project owner, or contracting authority, is a natural person (private or professional) or a private legal entity (company or association) or public institution (the State or a local authority) who assumes the financing of the project of house, building or infrastructure, and contracts the services of third parties involved in the design and construction of the house or building.

The project owner contracting authority implies: (1) ownership or right to use a suitable land lot; (2) the definition of the purpose and objectives of the building; (3) a duration for the complete realization of the design, the construction works until the final delivery of the building; (4) a budget to cover all the costs of the interventions of the companies involved in the construction until the final delivery of the building. For public construction projects, in most sites, the public authorities have to proceed according to strictly codified procedures which clearly define the organizations tasks and its relationship with the project manager and entities involved in the construction.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

This study focused on assessment of determinants of building construction project success in Jimma Zone. It is clear that success needs to be investigated from various perspectives. Cost, time and quality are the three basic factors of success measurement and the most important of Critical Success Factors in construction projects success in Jimma Zone.

Generally, building construction projects, in Jimma Zone, were determined with quality, cost and time factors. Among factors that are determining the quality of construction projects, findings showed that:

- Building projects accomplished with low level of quality;
- Many construction projects problems particularly determined by quality specification;
- Project manager's ignorance and lack of knowledge;
- Poor human resource management a factor the quality of building construction;
- Management commitment and leadership usually affect construction quality;
- Inadequate recruitment and selection of the necessary personal;
- Construction projects usually completed through a combination of many planned and unplanned events;
- The extent of team work of parties participating in the design phase is usually found as the determinant that affects the quality of building constructions

- Contrary to these, project participants such as structural engineer, electrical engineer, environmental engineer, civil engineer, architect and owner are collaborating to reach the required quality of building constructions, which was considered as an important experience.

Findings also showed that there are some cost related factors that determined the efficiency and effectiveness of building construction projects in the study area. Among others:

- Company's financial strength;
- there are construction projects which are not succeeded due to budget constraints;

- quality of building construction in Jimma Zone is highly determined by financial and technical experience;
- Lack of top management support is a critical success factor affecting the cost of building constructions;
- A well planned project schedule is a critical success factor affecting the cost of building construction projects;
- Technological implications are critical success factor affecting the design of quality buildings, which directly related to cost (affording ability); and
- Owners usually balance their requirements against economic considerations.

Regarding time, there are some factors that affect the success of building constructions in ways:

- There are construction projects which are not completed on scheduled time;
- Delay in project completion time has been closely related specifications and contractors qualification;
- Building projects are frequently influenced by success factors;
- A detailed specification of the individual action steps are significant in timely completing building construction projects; and
- Owners competence is a critical factor for the failure of schedule performance in Jimma Zone.

According to the information particularly obtained through interview, company's financial strength, lack of effective communication between stakeholders, effective scheduling and effective site management plus client consultation and support were critical success factors in building construction projects. The contractor is responsible for the project's compliance with all the necessary legal and regulatory requirements. The regression analysis showed that quality; cost and time determine 61.2% contribution for the success of building construction project the other 38.8% due to other variation or factors.

RECOMMENDATION

The finding of this research showed that there is a problem of quality specification, time efficiency and cost in effectiveness. Therefore, in order to change this picture in Jimma zone the following recommendations shall be taken.

- Engineering training in universities and technical schools must teach in-depth about legal condition of building construction without fraud, mistakes, etc. in building mix ratios.
- Empowering women in building construction project from their locality in different phases of the construction committees.
- Fighting corruption strictly.
- Offering license of building only for highly trained personnel's and professionals.
- The triangulation among consultants, contractors and clients should be strengthened by legal framework

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APPENDICIES

Jimma University College of Business and Economics Department of Business Management

Dear Respondent

This questionnaire is prepared to gather data on determinants of project success in Jimma Zone. The information serves only an academic research purpose. Your genuine information is critically important to come to a sound and meaningful conclusion.

Direction- you can put this sign in the box ✓

R- Implies for rank

No	INDICATORS	Strongly Agree (R=5)	Agree (R= 4)	Neutral (R= 3)	Disagree (R= 2)	Strongly Disagree (R= 1)
1	Building projects are frequently influenced by success factors					
2	I know, construction projects are usually completed through a combination of many planned and unplanned events					
3	Construction projects always accomplished with expected balance between cost, time and quality					
4	As I know, high quality is not always the primary objective for the client					
5	An appropriate level of quality is usually determined by contractors during au phases of building projects					
6	I know, there are construction projects which are not completed on scheduled time					
7	I know, there are construction projects which are not succeeded due to budget constraints					
8	I usually observe some building projects accomplished with low level of quality					
9	I observe many construction projects problems particularly determined by quality specification					
10	Delay in project completion time has been closely related specifications and contractors qualification					
11	Quality of building construction in jimma zone is highly determined by financial and technical experience					
12	Owners competence is a critical factor for the failure of schedule performance in jimma zone					
13	Project manager's ignorance and lack of knowledge are critical determinates for quality of projects in jimma zone					
14	Poor human resource management a factor the quality of building construction in Jimma zone.					
15	Owners usually balance their requirements against economic					

	considerations					
16	The completion of building construction projects accord with project requirements assuring the construction quality					
17	Management commitment and leadership usually affect construction quality in Jimma zone					
18	Quality teams usually provide contractors with structured environment necessary for successfully implementing and continually applying the quality of building projects					
19	The extent of team work of parties participating in the design phase is usually found as the determinant that affects the quality of building constructions					
20	Project participants such as structural engineer, electrical engineer, environmental engineer, civil engineer, architect and owner are collaborating to reach the required quality of building constructions.					
21	Scope of services is a critical determinant for the failure of building construction projects in Jimma zone					
22	Project size is a factor for the failure of building construction projects in Jimma zone					
23	Sophistication of the owner related to the design of facilities usually determine the success building construction projects in Jimma zone					
24	Technological implications are critical success factor affecting the design of quality buildings					
25	A well planned project schedule is a critical success factor affecting the cost of building construction projects in Jimma zone					
26	Lack of top management support is a critical success factor affecting the cost of building construction in Jimma zone					
27	Project stakeholders initially clearly define the intended goals and general directions of the building construction projects					
28	Top management support to provide the necessary resources is flexible and adequate for effectively executing building construction in jimma zone					
29	The competence of project managers is significant to efficiently and effectively executing building constructions in Jimma zone					
30	A detailed specification of the individual action steps are significant in timely completing building construction projects in Jimma zone					
31	Recruitment and selection of the necessary personal is significant experience for the integrity and multi-functionality of building project teams to think project quality					
32	Competence of project partnership(suppliers and sub-contractors) is a cause for the failure of building construction projects in Jimma zone					

(Source= adopted from fortune and white (2006), critical success factors for construction projects)

Time

Building projects are frequently influenced by success factors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid1	disagree	9	7.5	7.5	7.5
	neutral	44	36.7	36.7	44.2
	agree	37	30.8	30.8	75.0
	strongly agree	30	25.0	25.0	100.0
	Total	120	100.0	100.0	

I know, there are construction projects which are not completed on scheduled time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid6	strongly disagree	2	1.7	1.7	1.7
	disagree	14	11.7	11.7	13.3
	neutral	5	4.2	4.2	17.5
	agree	54	45.0	45.0	62.5
	strongly agree	45	37.5	37.5	100.0
	Total	120	100.0	100.0	

D

delay in project completion time has been closely related specifications and contractors qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid10	strongly disagree	1	.8	.8	.8
	disagree	13	10.8	10.8	11.7
	neutral	13	10.8	10.8	22.5
	agree	72	60.0	60.0	82.5
	strongly agree	21	17.5	17.5	100.0
	Total	120	100.0	100.0	

Owners competence is a critical factor for the failure of schedule performance in jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid12	strongly disagree	3	2.5	2.5	2.5
	disagree	19	15.8	15.8	18.3
	neutral	16	13.3	13.3	31.7

	agree	57	47.5	47.5	79.2
	strongly agree	25	20.8	20.8	100.0
	Total	120	100.0	100.0	

The competence of project managers is significant to efficiently and effectively executing building constructions in Jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid29	strongly disagree	3	2.5	2.5	2.5
	disagree	32	26.7	26.7	29.2
	neutral	12	10.0	10.0	39.2
	agree	52	43.3	43.3	82.5
	strongly agree	21	17.5	17.5	100.0
	Total	120	100.0	100.0	

A detailed specification of the individual action steps are significant in timely completing building construction projects in Jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid30	disagree	21	17.5	17.5	17.5
	neutral	20	16.7	16.7	34.2
	agree	51	42.5	42.5	76.7
	strongly agree	28	23.3	23.3	100.0
	Total	120	100.0	100.0	

Competence of project partnership(suppliers and sub-contractors) is a cause for the failure of building construction projects in Jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid32	strongly disagree	3	2.5	2.5	2.5
	disagree	36	30.0	30.0	32.5
	neutral	18	15.0	15.0	47.5
	agree	49	40.8	40.8	88.3
	strongly agree	14	11.7	11.7	100.0
	Total	120	100.0	100.0	

Cost

I know, there are construction projects which are not succeeded due to budget constraints

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	15	12.5	12.5	12.5
	neutral	7	5.8	5.8	18.3
	agree	56	46.7	46.7	65.0
	strongly agree	42	35.0	35.0	100.0
	Total	120	100.0	100.0	

Quality of building construction in jimma zone is highly determined by financial and technical experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.8	.8	.8
	disagree	16	13.3	13.3	14.2
	neutral	16	13.3	13.3	27.5
	agree	64	53.3	53.3	80.8
	strongly agree	23	19.2	19.2	100.0
	Total	120	100.0	100.0	

Owners usually balance their requirements against economic considerations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	3.3	3.3	3.3
	disagree	23	19.2	19.2	22.5
	neutral	13	10.8	10.8	33.3
	agree	60	50.0	50.0	83.3
	strongly agree	20	16.7	16.7	100.0
	Total	120	100.0	100.0	

Project size is a factor for the failure of building construction projects in Jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	10	8.3	8.3	8.3
	disagree	32	26.7	26.7	35.0
	neutral	12	10.0	10.0	45.0
	agree	49	40.8	40.8	85.8
	strongly agree	17	14.2	14.2	100.0
	Total	120	100.0	100.0	

Technological implications are critical success factor affecting the design of quality buildings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	9	7.5	7.5	7.5
	disagree	19	15.8	15.8	23.3
	neutral	7	5.8	5.8	29.2
	agree	62	51.7	51.7	80.8
	strongly agree	23	19.2	19.2	100.0
	Total	120	100.0	100.0	

A well planned project schedule is a critical success factor affecting the cost of building construction projects in Jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	2.5	2.5	2.5
	disagree	24	20.0	20.0	22.5
	neutral	6	5.0	5.0	27.5
	agree	61	50.8	50.8	78.3
	strongly agree	26	21.7	21.7	100.0
	Total	120	100.0	100.0	

Sophistication of the owner related to the design of facilities usually determine the success building construction projects in Jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	3.3	3.3	3.3
	disagree	22	18.3	18.3	21.7
	neutral	18	15.0	15.0	36.7
	agree	62	51.7	51.7	88.3
	strongly agree	14	11.7	11.7	100.0
	Total	120	100.0	100.0	

Lack of top management support is a critical success factor affecting the cost of building construction in Jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	1.7	1.7	1.7
	disagree	27	22.5	22.5	24.2
	neutral	6	5.0	5.0	29.2
	agree	53	44.2	44.2	73.3
	strongly agree	32	26.7	26.7	100.0
	Total	120	100.0	100.0	

Top management support to provide the necessary resources is flexible and adequate for effectively executing building construction in jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	3.3	3.3	3.3
	disagree	23	19.2	19.2	22.5
	neutral	20	16.7	16.7	39.2
	agree	59	49.2	49.2	88.3
	strongly agree	14	11.7	11.7	100.0
	Total	120	100.0	100.0	

Quality

I know, construction projects are usually completed through a combination of many planned and unplanned events

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	1.7	1.7	1.7
	disagree	19	15.8	15.8	17.5
	neutral	17	14.2	14.2	31.7
	agree	55	45.8	45.8	77.5
	strongly agree	27	22.5	22.5	100.0
	Total	120	100.0	100.0	

Construction projects always accomplished with expected balance between cost, time and quality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	16	13.3	13.3	13.3
	disagree	21	17.5	17.5	30.8
	neutral	11	9.2	9.2	40.0
	agree	49	40.8	40.8	80.8
	strongly agree	22	18.3	18.3	99.2
	13.00	1	.8	.8	100.0
	Total	120	100.0	100.0	

As I know, high quality is not always the primary objective for the client

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	6	5.0	5.0	5.0
	disagree	23	19.2	19.2	24.2
	neutral	18	15.0	15.0	39.2
	agree	53	44.2	44.2	83.3
	strongly agree	20	16.7	16.7	100.0
	Total	120	100.0	100.0	

An appropriate level of quality is usually determined by contractors during au phases of building projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	.8	.8	.8
	disagree	26	21.7	21.7	22.5
	nuetral	20	16.7	16.7	39.2
	agree	49	40.8	40.8	80.0
	strongly agree	24	20.0	20.0	100.0
	Total	120	100.0	100.0	

I usually observe some building projects accomplished with low level of quality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	12	10.0	10.0	10.0
	nuetral	10	8.3	8.3	18.3
	agree	57	47.5	47.5	65.8
	strongly agree	41	34.2	34.2	100.0
	Total	120	100.0	100.0	

I observe many construction projects problems particularly determined by quality specification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strogly disagree	1	.8	.8	.8
	disagree	11	9.2	9.2	10.0
	nuetral	17	14.2	14.2	24.2
	agree	51	42.5	42.5	66.7
	strongly agree	40	33.3	33.3	100.0
	Total	120	100.0	100.0	

Project manager's ignorance and lack of knowledge are critical determinates for quality of projects in jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strogly disagree	1	.8	.8	.8
	disagree	19	15.8	15.8	16.7
	nuetral	13	10.8	10.8	27.5
	agree	54	45.0	45.0	72.5
	strongly agree	33	27.5	27.5	100.0
	Total	120	100.0	100.0	

Poor human resource management a factor the quality of building construction in Jimma zone.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	25	20.8	20.8	20.8
	nuetral	8	6.7	6.7	27.5
	agree	58	48.3	48.3	75.8
	strongly agree	29	24.2	24.2	100.0
	Total	120	100.0	100.0	

The completion of building construction projects accord with project requirements assuring the construction quality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strogly disagree	5	4.2	4.2	4.2
	disagree	34	28.3	28.3	32.5
	nuetral	17	14.2	14.2	46.7
	agree	52	43.3	43.3	90.0
	strongly agree	12	10.0	10.0	100.0
	Total	120	100.0	100.0	

Management commitment and leadership usually affect construction quality in Jimma zone

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	strogly disagree	1	.8	.8	.8
	disagree	27	22.5	22.5	23.3
	nuetral	17	14.2	14.2	37.5
	agree	32	26.7	26.7	64.2
	strongly agree	43	35.8	35.8	100.0
	Total	120	100.0	100.0	

Quality teams usually provide contractors with structured environment necessary for successfully implementing and continually applying the quality of building projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strogly disagree	2	1.7	1.7	1.7
	disagree	27	22.5	22.5	24.2
	nuetral	20	16.7	16.7	40.8
	agree	54	45.0	45.0	85.8
	strongly agree	17	14.2	14.2	100.0
	Total	120	100.0	100.0	

Project participants such as structural engineer, electrical engineer, environmental engineer, civil engineer, architect and owner are collaborating to reach the required quality of building constructions.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strogly disagree	1	.8	.8	.8
	disagree	23	19.2	19.2	20.0
	nuetral	6	5.0	5.0	25.0
	agree	47	39.2	39.2	64.2
	strongly agree	43	35.8	35.8	100.0
	Total	120	100.0	100.0	

The extent of team work of parties participating in the design phase is usually found as the determinant that affects the quality of building constructions

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	strogly disagree	2	1.7	1.7	1.7
	disagree	16	13.3	13.3	15.0
	nuetral	21	17.5	17.5	32.5
	agree	59	49.2	49.2	81.7
	strongly agree	22	18.3	18.3	100.0
	Total	120	100.0	100.0	

Scope of services is a critical determinant for the failure of building construction projects in Jimma zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strogly disagree	1	.8	.8	.8
	disagree	26	21.7	21.7	22.5
	nuetral	20	16.7	16.7	39.2
	agree	49	40.8	40.8	80.0
	strongly agree	24	20.0	20.0	100.0
	Total	120	100.0	100.0	

Project stakeholders initially clearly define the intended goals and general directions of the building construction projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strogly disagree	3	2.5	2.5	2.5
	disagree	25	20.8	20.8	23.3
	nuetral	9	7.5	7.5	30.8
	agree	64	53.3	53.3	84.2
	strongly agree	19	15.8	15.8	100.0
	Total	120	100.0	100.0	

Recruitment and selection of the necessary personal is significant experience for the integrity and multi-functionality of building project teams to think project quality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strogly disagree	1	.8	.8	.8

	disagree	22	18.3	18.3	19.2
	nuetral	14	11.7	11.7	30.8
	agree	55	45.8	45.8	76.7
	strongly agree	28	23.3	23.3	100.0
	Total	120	100.0	100.0	

n

Quality

Descriptive Statistics			
	N	Mean	Std. Deviation
I know, construction projects are usually completed through a combination of many planned and unplanned events	120	3.7167	1.03861
Construction projects always accomplished with expected balance between cost, time and quality	120	3.4167	1.59085
As I know, high quality is not always the primary objective for the client	120	3.4833	1.13006
An appropriate level of quality is usually determined by contractors during au phases of building projects	120	3.5750	1.06639

I usually observe some building projects accomplished with low level of quality	120	4.0583	.91022
I observe many construction projects problems particularly determined by quality specification	120	3.9833	.96130
Project manager's ignorance and lack of knowledge are critical determinates for quality of projects in jimma zone	120	3.8250	1.03439
The completion of building construction projects accord with project requirements assuring the construction quality	120	3.2667	1.10563
Poor human resource management a factor the quality of building construction in Jimma zone.	120	3.7583	1.04516
Management commitment and leadership usually affect construction quality in Jimma zone	120	3.7417	1.19168
The extent of team work of parties participating in the design phase is usually found as the determinant that affects the quality of building constructions	120	3.6917	.97701
Project participants such as structural engineer, electrical engineer, environmental engineer, civil engineer, architect and owner are collaborating to reach the required quality of building constructions.	120	3.9000	1.11822

Scope of services is a critical determinant for the failure of building construction projects in Jimma zone	120	3.5750	1.06639
Quality teams usually provide contractors with structured environment necessary for successfully implementing and continually applying the quality of building projects	120	3.4750	1.04490
Project stakeholders initially clearly define the intended goals and general directions of the building construction projects	120	3.5917	1.06507
Recruitment and selection of the necessary personal is significant experience for the integrity and multi-functionality of building project teams to think project quality	120	3.7250	1.04490
Valid N (listwise)	120		

Time

Descriptive Statistics			
	N	Mean	Std. Deviation
Building projects are frequently influenced by success factors	120	3.7333	.92340
I know, there are construction projects which are not completed on scheduled time	120	4.0500	1.01956

Delay in project completion time has been closely related specifications and contractors qualification	120	3.8250	.87603
Owners competence is a critical factor for the failure of schedule performance in jimma zone	120	3.6833	1.05307
The competence of project managers is significant to efficiently and effectively executing building constructions in Jimma zone	120	3.4667	1.13710
A detailed specification of the individual action steps are significant in timely completing building construction projects in Jimma zone	120	3.7167	1.01405
Competence of project partnership(suppliers and sub-contractors) is a cause for the failure of building construction projects in Jimma zone	120	3.2917	1.09541
Valid N (listwise)	120		

Cost

Descriptive Statistics			
	N	Mean	Std. Deviation
I know, there are construction projects which are not succeeded due to budget constraints	120	4.0417	.95615

Quality of building construction in jimma zone is highly determined by financial and technical experience	120	3.7667	.94142
Owners usually balance their requirements against economic considerations	120	3.5750	1.08203
Project size is a factor for the failure of building construction projects in Jimma zone	120	3.2583	1.23326
Sophistication of the owner related to the design of facilities usually determine the success building construction projects in Jimma zone	120	3.5000	1.02899
Technological implications are critical success factor affecting the design of quality buildings	120	3.5917	1.18461
A well planned project schedule is a critical success factor affecting the cost of building construction projects in Jimma zone	120	3.6917	1.09848
Lack of top management support is a critical success factor affecting the cost of building construction in Jimma zone	120	3.7167	1.13895
Top management support to provide the necessary resources is flexible and adequate for effectively executing building construction in jimma zone	120	3.4667	1.03659
Valid N (listwise)	120		