ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF PROJECT MANAGEMENT

ASSESSING THE EFFECT OF PROJECT MANAGERS' COMPETENCIES ON PROJECT SUCCESS IN THE CASE OF FE CONSTRUCTION PLC.

BY

TSION TADESSE BEKELE
ID; SGS/0290/2012A

July, 2021

Addis Ababa, Ethiopia

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A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF ART IN PROJECT MANAGEMENT

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APPROVED BY BOARD OF EXAMINERS

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External Examiner	Signature
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Internal Examiner	Signature

DECLARATION

I declare that this thesis is my genuine work prepared under the guidance of Muluadam Alemu (PhD) and that all sources of materials used for this thesis have been duly acknowledge. I declare that this thesis is not submitted to any other institution anywhere for any academic purposes.

_____ _____

Name Signature

St. Mary's University, Addis Ababa **July, 2021**

Certification

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

_____ _____

Adviser Signature

St. Mary's University, Addis Ababa **July, 2021**

Acknowledgment

This project work has been reached in this result in the help of my Almighty God with his Mom and next it is a result of a collective effort outcome of a number of people around me. So I would like to give my feelings to thank the following individuals who are support me to successfully complete this project.

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Last but not least in importance, I offer my sincere appreciation to all of those persons who contributed so much in one way or another, during the compilation of this project. Thank you all.

Contents

List of Table page number

List of Figure **page number**

LIST OF ACRONYMS

PM-project manager

PMBOK-project management body of knowledge

PMI-project management institutions

SPSS – Statistical package for social science

Abstract

The purpose of this study was to assess the effect of project managers' competencies on project success in the case of FE construction plc. The study used both primary and secondary data to achieve the intended research objectives. A quantitative and qualitative research approach of the data collection was used. The study used explanatory research design and surveyed 50 project managers, site engineers, office engineers and project coordinator (they have direct contact from project manager by work) from the selected projects at Addis Ababa city from FE construction plc. Were distributed to all project sites and head office. The data were analyzed using SPSS and interpreted in percentage. Analyses were done based on three competency variables knowledge, skill, and attitude. Results revealed that Pearson correlation among project managers' competencies are moderate to high, correlation among project's success elements are also moderate to high, and correlation between project managers' competencies and project success are also high to very high. Regression analysis results also showed that all the three project manager competency variables have strong effect on project success, skill has the highest impact followed by knowledge and finally attitude having significant impact. There was 87.0 % change in project success attributed to the combined effect of the independent variables in the model (Knowledge, Skill and Attitude). Overall, project manager competency has strong effect on project success, which means that high project manager competency is likely to bring about higher level of project success. Though the research findings are valuable, limitations in terms of a case of one company only and the use of just some variables may increase risk of respondent bias. Future studies, in order to avoid these limitations, can extend their scope to include a number and range of organizations and more competency variables.

Key words: project manager, project manager competence, project success, competency variable, skill, knowledge, attitude.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Project is a specific activity to be carried out and which consumes resources and has a beginning and an end. Managing project is one of the oldest and most respected accomplishments of mankind. This is highlighted by the achievement of the builders of pyramids, the architects of ancient cities, the mason and craftsmen of Great Wall of China and other wonders of the World (Peter 2001). The accomplishment of project through the application and integration of the project management process of initiation, planning, executing, monitoring, controlling and closing is known as project management. Project management integrates these functions progressively through the project life cycle with the aim of satisfying the stakeholders and constituents according to the project's established requirements (Andersen, 2006).

Project management is an area of interest that is witnessing significant growth, many organizations are implementing project management methodologies, and there is marked demand for competent project managers who can face unexpected challenges. The project manager must be considered as invaluable asset to any project, which intends to be successful. As every project is different, and every project team is different, there needs to be more focused analysis on how the project manager can effectively interact with a team to produce successful outcomes as it pertains to project tasks. The success or failure of a project largely hinges on the project manager (Ireland, 1992).

The project manager is the person who drives the project and sets the expectations of the stakeholders involved in the project. It is the prerogative of the project manager to set the standards of cost, time and quality for a project (Ireland, 1992). Each project manager adopts a unique management and working style. However, the management and working style of the project manager also depend on the industry in which the project manager is operating. The complex nature of projects in a competitive work environment needs efficient competencies of project managers. The whole project management team must have a wide variety of knowledge, skills, and abilities to deal with the day-to-day management challenges of changes (Ireland, 1992).

Project manager's knowledge areas play a vital role in the successes or failure of projects and an experienced Project Manager will possess particular uniqueness that will enhance the team performance and his planning based on his project management skills (Ehsan, *et al.,* 2010). The

overall success of project and reaching the set goals depend on cooperation of a whole project team and the leadership of its project manager (Cech & Chadt 2015).

Project managers seek challenging projects. Higher complexity in projects and fixed price contracts increase awareness and importance of success factors. Project managers should not be assigned to projects that are below their management capabilities. Project managers with greater experience emphasize the importance of the most influential success criterion, team satisfaction. That should be considered when assigning project managers to business-critical projects (Ralf & Rodney 2007).

Competencies are often studied by individual attributes like skills, knowledge and attitudes, that perform tasks (Rainsbury, *et al*., 2002). The individual attributes can broadly be classified as cognitive and behavioral attributes. The cognitive attributes include technical skills that usually includes technical knowledge and expertise. Behavioral attributes include not only personal characteristics that describe how one handles a situation, but also interpersonal skills that describe how relationships are handled, and organizational skills that describe how to secure organizational outcomes through organizational networks (Araujo & Pedron, 2016).

Mahsa, *et al.,* (2016) defined competency as the "underlying characteristics of an individual causally related to criterion-referenced effective and/or superior performance in a job or situation" and the clusters of skills, knowledge, abilities, and behaviors required for success.

Competence refers to the set of interpersonal knowledge and skills possessed by professional that enables him or her to understand the work (Zainuddin, 2012). The overall success of project and reaching the set goals depend on cooperation of a whole project team and the leadership of its project manager (Cech & Chadt, 2015). Projects, crisis, uncertainty and suspense are continually recurring to test the quality of project managers (Aretoulis & Triantafyllidis, 2016). Some professionals have a personality type that might hinder them from developing some soft skills (Araujo & Pedron, 2016).

Therefore, this study attempted to look and assess Project Managers' Competencies effect on Project's success as the three components of the project manager competencies, which are; skills competency, knowledge, and attitude competencies on project success or failure based on the results of the iron triangle aspects (time, cost, and quality).

1.2 statement of the problem

There are several reasons for the success or failure of a project according to project manager performance (Idako, 2008). Construction industry plays a major role in Ethiopia and also in other developing countries but there is poor level of project managers performance of the industry, improving the performance of the industry needs to be a priority action (Yimam, 2011). In this regard, project manager's competency is a critical stage for the success or failure of a project.

According to the Project manager competency development framework revised edition published by PMI (2002), project success requires project manager competence. According to Idako (2008) Projects are becoming more challenging due to complex integrated business processes; complex organizational structures; alliances and partnerships; and political and global considerations. Thus, understanding how to improve project management capability becomes even more important for an organization to remain viable and to achieve its strategic objectives. The efforts of keeping projects within scope, on schedule and within budget to satisfy customers are increasing (Yimam, 2011).

Based on research conducted by Othman (2013) a common problem that effect group's performance was came from the project manager's leadership style itself. The project manager is one of the main parties in the role of the all industries. This research study problem is to investigate the effect of the project manager's competencies on the project success for construction project fields.

Organizations in order to develop their personnel and of course their project managers skills need to engage them in problem solving, decision making and allow them to come up with new ideas in working groups (Omidvar, *et. al.*, 2011). It is better for Project manager to expert problem solving skill when exposed to situations that makes to think differently, in opportunities with curiosity increase, or feedbacks that bring challenges to learning and changes in behavior (Pereira & Rabechini, 2013).

Currently, to follow standards and procedures, organizations develop their personnel and project managers to have skills needed to engage them in problem solving, decision making and allow them to come up with new ideas in working groups (Othman, 2013). It is beneficial for a project manager to be equipped with problem-solving (technical skill) and leadership skills

(soft/management skill) for situations that would make him/her to think differently, in opportunities with curiosity increase, or feedbacks that bring challenges to learning and changes in behavior (Pereira & Rabechini 2013). The efficient leadership and project management abilities help in developing the ability of the workforce to manage the diverse situations effectively (Othman, 2013).

Since there are very huge increases in the number of projects; then the need for more research that investigates the effect of the project competencies on the project success is highly needed. Thus, the purpose of this research is to assess the effect of project manager competency on project success based on the selected competency variable in FE construction.

1.3 Research objectives

1.3.1 General objective

The main objective of this study is to assess the effect of project manager's competency on project success in the Case of FE Construction Company.

1.3.2 Specific objectives

To meet the general objective, the study focused on the following specific objectives:

- To assess the effect of project manager knowledge on the project success.
- To assess the effect of project manager skill on the project success.
- To assess the effect of project manager attitude on the project success

1.4 Research question

The purpose of this study is to improve the understanding of why projects succeed by looking to the project manager contribution. The study was focus on the effect of the three mentioned his/her competencies toward project success as following:

1. To what extent do the project manager's skills competency affect the project's success?
2. To what extent do the project manager's knowledge competency affect the project success?
3. To what extent do the project manager's attitude competency affect the project success?

1.5 Significance of the study

This research focused on assessing the relationship between the project manager competencies and project success, in an attempt to develop and use the competencies that are seen to be related the

most to efficiency in project management practices. That can be used to enhance and improve the performance of both the project manager and his managerial ways in executing the project.

This research contributes to comprehending the significance that project managers and their work styles and personal characteristics play on the success or failure of projects. It also seeks to analyze the project manager competencies that have the effect on the project success relationship between the project managers and the project management.

Assessing and examining the actual competences of project managers of FE construction plc enables to identify skill gaps to take corrective actions in performing the desired goals of organizational project with project management ability. It also urges or impels the company in developing the competencies of its project managers for the good –will of the company.

In addition to being an academic exercise to fulfill the requirement of the program, this research is believed to produce results that can improve project managers' competence in selected organization which in turn helps to achieve project success.

1.6. Scope of the study

Since competency is a wide term, most people define and see from different perspectives. Cartwright & Yinger (2007) described competency as it is a cluster of related knowledge, attitude, skills and other personal characteristics that affect a major part of one's job and correlates with performance and can be measured against well-accepted standards.

Conceptual scope of the study is delimited to assess the effect of project manager's competency on the project success in the case of FE construction. This is to identify the major project manager's competency in achieving projects within time schedule, within budget and fulfill standard quality requirement.

This research focused on the effect of Project manager's competency related to knowledge, Skill and attitude for the overall project success. It also provides an overview on how competencies and roles of project managers contribute to the success of construction projects. Among the projects that are under construction the researcher chosen eight projects for the respondents of the questioner which are located in Addis Ababa cites. Therefore the result enables to portable applicable information about the current status of project manager's competency in FE Construction plc.

Yimam (2011) approved that for a project to be considered successful, it must be completed within the parameters of its performance goals with acceptable quality standard, within its slated budget and on schedule. Therefore, this study also considered this three project success dimensions (time, cost and quality).

1.7. Limitation of the study

This study has limitations identify potential gaps or problems in the research. Those limitations are;

- It was hard to collect questioners and to have a proper interview with project managers and other stakeholders (having direct connection from project managers) due to their work, therefore these groups have to allocate their spare time for those who need their support in replying the questionnaires and confront with interview.
- Access to important competency related documents and working manuals and approval by authorities was also difficult to find.
- Some respondents were hesitant to tell the truth, about their competency. In this regard, the researcher try to tell the name of every respondents were not listed and information was not available to anyone who was not directly involved in the study.

1.8. Organization of the Study

This project is organized into five chapters. The first Chapter include background of the study, statement of the problem, objective of the study, research questions, research methodology, and scope of the study and limitation of the study. Chapter two is devoted to literature review informing the reader of what is already known in this area of study and discusses different concepts on project manager's competency components and project success. Chapter three discusses the methodology employed in the study, including, research design, research approach, sample size, data source and collection method, procedure of data collection and method of data analysis. Chapter four described the presentation, analysis and interpretation of the analyzed collected data through the proposed instruments, finally, chapter five presented general conclusions and recommendations based on what is discussed in the previous chapters.

1.9 Definition of Terms

Project: a temporary endeavor undertaken to create a unique product or service, temporary means that the project has a definite ending point, and unique means that the product or service differs in some distinguishing way from all similar products, service, or result (Hornby, 1989).

Project manager (PM): is a person who has the overall responsibility for the successful initiation, planning, design, execution, and monitoring, controlling and successful conclusion of a project. PM must work well under pressure and be comfortable with change and complexity in dynamic environments. PM must resolve complex tasks and problems and see projects to success (Hornby, 1989).

Project Manager Competencies: are a cluster of related knowledge, attitudes, skills, experience and other personal characteristics that affects a major part of one's job such as: Ability to control processes and activities in a result-oriented manner, Ensures project progress, and Stress tolerance (Hornby, 1989).

Skill Competency: are the skills that a person uses to properly interact with other people (soft skill). These are skills such as effective communication, assertive communication, anger management, leadership, conflict resolution and/or teamwork (Hornby, 1989).

Knowledge competency: the identified professional practice gap of the learner can be based on a range of needs. One such need includes project management knowledge areas that is the range of one’s information or understanding, the sum of what is known (Hornby, 1989).

Attitude competency: This means that you use information from a variety of sources including personal experience and your own observations to identify options and solve problems. They refer to using specialized knowledge and experience related to project management (Hornby, 1989).

Project success effectively and efficiently achieving all project objectives in scope, on time and within budget as per the plan (Hornby, 1989).

Project failure not achieving all project objectives in scope, on time and within budget in an effective and efficient manner (Hornby, 1989).

CHAPTER TWO: LITERATURE REVIEW

In this chapter, the theoretical background for the main variables studied in this research is presented, covering the areas of concern for this research; the effect of the focused three project manager's competencies: Skills competency (self-awareness, emotional resilience, intuitiveness, interpersonal sensitivity, influence, motivation, conscientiousness and etc.); Knowledge (critical analysis and judgment, vision and imagination, strategic perspective and etc.); and attitude competency (resource management, engaging communication, empowering, developing, achieving and etc.) on project success or failure based on the iron triangle (time, cost, and quality). Definitions, historical roots, and previous studies on those areas displayed, also include conceptual framework.

2.1 Theoretical Literature

2.1.1 Project manager

The project manager is the person assigned by the performing organization to lead the team that is responsible for achieving the project objectives (PMI, 2013). According to Roberts & Wallace (2004), the project manager owns the project and has sole responsibility for its outcome. Therefore, the project manager is responsible to organize, motivate and lead the project team to achieve the objective of a project. According to Tayntor (2010), they lead the rest of the team; they make key decisions; they are involved in the day-to-day activities; they set the tone for the whole project. In other words, they are the linchpins of the project.

A project manager is similar to a chief executive or managing director. Indeed, it has become relatively common for large organizations to use project management assignments as a means of developing future general managers (Roberts & Wallace, 2004). Sometimes a project manager is assigned for more than one project and this is common in small and medium sized projects. Where small to medium sized projects are concerned, the project manager is often responsible for managing several projects concurrently (Roberts & Wallace, 2004).

According to Tayntor (2010), projects do not happen without people, and if the project is to be successful it is essential that the right people be involved.

Boyatzis (1982) described that project manager is a person, who sets the expectations for a project. The project manager sets the expected output in terms of cost, quality and time and makes sure they are not totally conflicted. Often, he showed project manager is a person blamed when various dissatisfaction arises amongst team members and customers, irrespective of industry.

2.1.2 Project manager Competency

The work of Neuhauser (2007) commences with the assertion that there are two aspects to the responsibilities of the project manager, with these being (a) the technical aspects of the project including planning, scheduling, budgeting, statistically analyzing, monitoring and controlling and (b) the managing of the people related aspects of the project in such a manner as to motivate the project team to successfully complete the project.

Hornby (1989) defined competency as the knowledge, skills and qualities of effective managers, and point to the ability to perform effectively the functions associated with management in the work situation. Hornby (1989) States those competencies are the characteristics of a manager, which lead to the demonstration of skills and abilities, which result in effective performance within an occupational area. Competency is linked with individual behavior and job performance.

International Project Management Association (IPMA) defined competence as knowledge experience personal attitude. Knowledge and experience relate to function and attitude relates to behavior (IPMA, 2002). Project management professionals working in projects where technical issues are important must have the competency to deal with them. Project Managers must be able to recognize the issue and be confident that appropriate action has been taken to deal with them. Project management competencies are achieved by the combination of education and the knowledge acquired during training, the skills developed through experience, and application of such acquired knowledge and experience (IPMA, 2002).

The Project Management Competency Development (PMCD) Framework describes project manager's competency as the process by which the project manager continuously applies his knowledge, skills and personal behaviors with the intention of delivering projects that will meet the requirements of the different stakeholders (PMI, 2007).

Competency: An underlying characteristic of an individual that is causally related to criterion referenced effective and/or superior performance in a job or situation (Bauer, 2005).

Competencies: Competencies of project management are of a common consensus that there are competencies that should be possessed by project managers to ensure success on projects. According to research, competence is a combination of skills, knowledge and individual characteristics (Crawford, 2003).

Competencies measurement: the above competencies are grouped under different umbrellas by different authors despite being generally similar such as Thomas (2008) concluded competencies are measurable.

Competencies of project management is a common consensus that competencies should be possessed by project managers to ensure success on projects. According to research, competence is a combination of skills, knowledge and individual characteristics (Crawford, 2005).

Feeny & Willcocks (1998) have indicated there was a positive correlation between project success and leadership competence of a project manager. This competence focuses on how the project manager guides, inspires and motivates team members and other project stakeholders to manage and overcome issues to effectively achieve project objectives.

Alexander & Robertson (2004) further explains that, regardless of the project structure an organization adopts, the stakeholder's group is often not within the project manager's range of contacts, although those stakeholders will still be in place after the project completes, where the project manager will most likely to be assigned to another project.

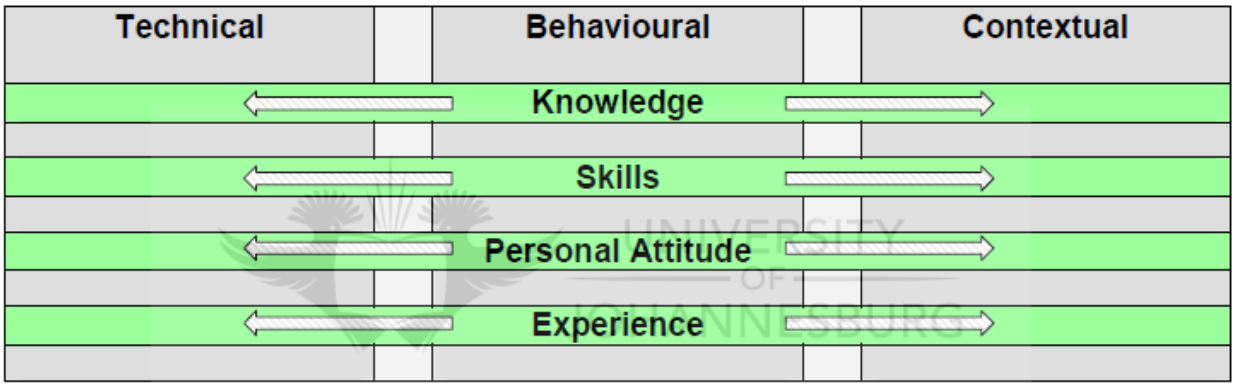
2.1.3 Components of Project Manager's Competencies

According to Bodea, Elmas, Tanasescu & Dascalu (2010), competency can be grouped into four components and three categories as depicted in figure 2.1 below. The project management competencies components are:

- **Knowledge:** the knowledge in generally accepted practices of project management applied to specific technical disciplines. which consists critical analysis and judgment, vision and imagination, and strategic perspective

- **Skills:** the capability to apply knowledge in an efficient, effective, professional and successful manner. such as self-awareness, emotional resilience, intuitiveness, interpersonal sensitivity, influence, motivation, and conscientiousness
- **Attitude:** the commitment to perform in an appropriate and acceptable professional and ethical manner. consists resource management, engaging communication, empowering, developing, and achieving
- **Experience:** the knowledge and skill that is gained from performing an activity

Figure 2.1: the project management competences



Source: Adapted from Bodea, Elmas, Tanasescu & Dascalu (2010)

The project management competence categories are as follows:

- Technical competencies of delivering projects in a structured way, including the project management process.
- Contextual competencies in managing relations with projects within organizations, programmers and portfolios, based on the knowledge of project characteristics, projects in the organizational context and project management.
- Behavioral competencies for a positive, collective and dynamic thrust in nurturing project management professionalism such as leadership, communication, result orientation, ethics, negotiation and so forth.

2.1.3.1. Knowledge Competency

PMI (2007) expresses knowledge as knowing something with the familiarity gained through experience, education, observation, or investigation, it is understanding a process, practice, or technique, or how to use a tool. The proper measure of learned knowledge and practice leads to increasing levels of competence and expertise.

According to Mnkandla & Marnewick (2011) there are two forms of knowledge, namely, explicit and tacit knowledge. Education is the primary means for acquiring explicit knowledge. This knowledge focuses on hard skills that are teachable abilities or skill sets that are easy to quantify the technical information. Explicit knowledge can be articulated as words and numbers making it easier to communicate and share. PMI (2013) Guide defined explicit knowledge is within the 10 knowledge areas which provides explicit knowledge regarding managing projects.

Tacit knowledge is the kind of knowledge that is difficult to transfer to another person by means of writing it down or verbalizing it but is primarily attained through experience (Holzmann, 2013). Alternatively, there is knowledge pertaining to the organization, industry and project type, such as engineering, information systems and finance. Industry, organizational and project type knowledge is both explicit and tacit as both knowledge types inform the various phases and processes during a project. It could be argued that explicit knowledge is similar to technical skills whilst tacit is to soft skills. Specific project and industry knowledge are required to apply the various skills accordingly (Holzmann 2013).

Based on the review of Hussin & Hamid (2006), the role or responsibilities that every project manager should have during his career life are shown below:

- **Critical Analysis and Judgment**: To investigate facts, pinpoint the flaws of proposals, and identify the positives and negatives of ideas. To also make decisions and judgments based on facts and rational assumptions while being aware of the influence of such assumptions. (Gibson and Nesbit, 2006).
- **Vision and Imagination**: To be innovative in all work aspects, have the proper priorities for the upcoming tasks and a clear vision for the organization's future direction along with the ability to foresee how changes might affect that vision (Raiden, et. al., 2004).
- **Strategic Perspective**: To be able to see the broader implications of events, explore a variety of relationships, balance considerations on the short and long run, sensitive to the impact of

decisions taken across the organization, able to identify opportunities and threats around the organization, sensitive to the needs of stakeholders and the influence of external factors on the actions and decisions taken (Raiden, et. al., 2004).

2.1.3.2. Skill Competency

Project management skills are often classified as technical or soft skills. Technical skills refer to the abilities and knowledge needed to perform specific tasks to understand and apply various tools and techniques pertaining to projects in general as well as specific projects such as information systems projects (Holzmann 2013).

El-Sabaa (2001) showed that these skills are primarily developed through training and experience. Conversely, soft skills include, amongst others, decision making, delegation and teamwork. Bredillet, *et al.,* (2013) states that there is a movement away from technical to soft skills (project manager behaviors). This coincides with the notion that organizations are focusing more on soft skills when hiring project managers rather than technical skills (El-Sabaa, 2001). Soft skills primarily focus on communication and people management, which is comparable to the research. These skills are a cluster of productive personality traits that characterize one's relationships in a milieu. It can include social graces, communication abilities, language skills, personal habits, cognitive or emotional empathy, time management, and teamwork and leadership traits. Verbal skills are paramount to any project manager as they are responsible for managing and directing the various project members as well as liaising with the various stakeholders. Furthermore, verbal skills become even more important when projects are multinational as there are various languages and cultures involved, thus making communication that much more difficult. Projects exhibit change on a continuous basis and have elements of ambiguity where the various stakeholders have varying interpretations of project information. This requires project managers to be able to manage ambiguity and change on an ad hoc basis to ensure the project delivers the required business benefits as stipulated during the project initiation and planning phase (El-Sabaa, 2001).

The main skills and behavioral personalities of project managers have been divided into technical and human-related skills (Fox, 2006).

Technical Skills: - According to Fox (2006), each member of a project management team must have competent technical skills in the relevant field of expertise to implement and integrate all

aspects of the project, as well as an adequate knowledge and proficiency at using project management tools and techniques. Although project managers do not need to be experts in the technical areas of the project, basic technical knowledge is a great asset for project managers. The more technical expertise project managers have in the field of a project, the greater their effectiveness in managing the work.

Human-related Skills: - The importance of human skills in managing projects has been emphasized in a number of studies. According to Fox (2006), behavioral competencies can be grouped into two main categories: task performance behaviors (contributing to the technical and managerial functions, such as planning, coordinating, delegating, and so forth) and contextual performance behaviors (contributing to the organizational, social and psychological environment, such as conscientiousness, commitment, initiative, or dedication).

Soft competences

(1) Communication – Sentences that clearly stated communication as well as things such as building or managing relationships, third parties or stakeholders, dealing with information, presentations, reporting, documentation, and language skills, for example, were all coded under communication (Fox, 2006).

(2) Leadership – The sentences that were dealt under leadership included sentences that clearly mentioned the word leadership as well as the ones that included things such as mobilization, influencing people, acting strategically, direction, coaching and mentoring (Fox, 2006).

(3) Problem solving – Sentences that clearly mentioned both parts of this competence problem identification and decision making were dealt in this category (Fox, 2006).

(4) Team working – For team working a distinction was made between being part of a team and managing a team. When the advertisement mentioned managing a team it was classified as human resource management competence, but when it talked about working in and being part of a team it was dealt under this category (Fox, 2006).

(5) Organizing – This category was limited to sentences or words that mentioned the competence of being organized or organizing. Organizing competence includes phrases like be responsible for organizing; must possess excellent organizational skills; organized; organization ability; strong organizational skills and project managers who are organized (Fox, 2006).

(6) Flexibility & alertness – For this category sentences that mentioned a fast paced and dynamic environment were included under flexibility. Competences which can be coded under flexibility & alertness includes fast-paced environment (Fox, 2006).

(7) Creativity & innovation – This category included both the competence to act creatively and innovatively as the competence to foster such behavior within the participants of the project. It included sentences that either mentioned the word creativity and innovation or called for forward thinking and the ability to identify opportunities (Fox, 2006).

Hard Competences

(1) Project integration management – This category is a broad category by nature. It includes general sentences about PM and words such as PM methods, processes and vague terms about PM. Also sentences that mention dependencies, the whole life-cycle of the project, monitoring and controlling progress (Boyatzi, 1982).

(2) Project scope management – The category of scope management included all the sentences that specifically mentioned scope management, required planning competence, talked about defining or understanding requirements and the ones that mentioned changes (Boyatzi, 1982).

(3) Project time management –Sentences that mentioned time, tracking milestones, prioritize and creating as well as monitoring schedule all were coded under this classification. The phrases dealt as project time management incorporates key work packages to be delivered on time; prepare project schedule; monitor the project's progress in terms of planned versus actual schedule; outstanding time management skills; Monitoring of project milestones and delivers the project within agreed time (Boyatzi, 1982).

(4) Project cost management –All sentences that mentioned words such as budget, finance, tracking expenditure were included under project cost management (Boyatzi, 1982).

(5) Project quality management – This category included all mentions of words such as quality, improvements, compliance with quality procedures or regarding the quality of the end result and its usefulness to the client (Boyatzi, 1982).

(6) Project risk management – The sentences classified under this competence include all sentences that mention things like risk, risk identification, risk mitigation, minimizing risk, creating contingency plan (Boyatzi, 1982).

(7) Project procurement management – This category included all words that related to obtaining quotes, bids or offers from suppliers, developing resource requirements and managing contracts

from suppliers. Everything that was related to what would be procured and when fell under this category (Boyatzi, 1982).

(8) PM software competence – The last hard competence that was analyzed dealt with PM related software. General software such windows or Microsoft office were disregarded. The same with industry specific software competence such as specific applications related to programming (Boyatzi, 1982).

2.1.3.3. Attitude Competency

Boyatzi (1982) described attitude as, a capacity that exists in a person that leads to behavior that meets the job demands within parameters of organizational environment, and that, in turn brings about desired results. Attitude Competency is a capacity that exists in a person that leads to behavior that meets the job demands which brings in desired results beyond knowledge and skill. It is the sum total of a person's disposition towards the job seen in his behavior of job involvement, organizational commitment and overall satisfaction to meet the job requirements and the ability to bring in desired result.

The personal characteristics of project managers play a more pivotal role in project management than previously believe. The attitude of a project manager directly impacts their ability to manage a project effectively and efficiently. Furthermore, their personal characteristics are fundamentally linked to their personality (El-Sabaa, 2001).

Characteristics relating to people's interactions are the most prevalent, which correspond to the notion that project management is primarily people management. Delivering successful projects requires a project manager to be firm whilst being able to negotiate, as these are key to effective leadership and ensuring project team members fulfill their responsibilities. Expanded the study and discovered more about project managers' personalities. They discovered that project managers have intuitive and thinking characteristics which primarily align to the soft skills required (Holzmann, 2013).

As per the study by Boyatzi (1982) on the relationship between project types and project manager's Attitude, Projects were classified as: urgent, complex, novel and normal. Honesty and being reliable is prevalent in all project types for effective attitude development.

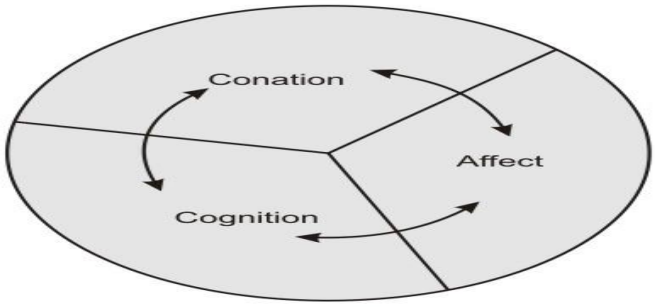
The tricomponent attitude model

As the name suggest, the tricomponent attitude model states that attitudes are composed of three components, viz., a knowledge (cognitive) component, feeling and emotional (affect) component and the action (conative) component (See Figure 2.3).

- The knowledge or the cognitive component comprises the cognitive processes that lead to the formation of attitudes. In terms of marketing, the knowledge or cognitive component of the tricomponent model consists of consumers' knowledge about the products/service offering and the marketing mix. Consumer attitudes are formed on the basis of experiences as well as information received from personal (WOM, family, friends, peers etc.) as well as impersonal (marketer's sources) sources of information that are retained in one's memory. These get shaped by beliefs and opinions, where the consumer begins to perceive that the attitude object (person, situation or thing) possesses certain attributes and acts of behavior would lead to outcomes. The beliefs and opinions get repeatedly reinforced, and finally give rise to attitudes. This knowledge component leads to the emotional component.
- The feeling or the affect component comprises the emotional component of attitudes. In fact, this is understood to be the attitude itself, as it depicts emotional states that are positive, neutral or negative. In marketing terms, it refers to a consumer's feelings about a product/service offering and the marketing mix. These emotions could relate to an attribute or the overall object. It is evaluative in nature and would vary on a continuum as like or dislike, favorableness or un favorableness. It manifests itself through feelings and resultant expressions like happiness, sadness, anger, surprise etc., and is indicative of consumer reaction towards the offering and the mix, which subsequently affects the purchase decision making as well as the purchase process. Such reactions and resultant states also get stored in our memory. Their retrieval, recall and recollection also impacts future decision making.
- The behavioral or the conative component of attitudes depicts the outcome of an attitude. As attitudes are formed out of psychographic components, they cannot be seen. The first two components, knowledge and feeling are not expressive or illustrative of attitudes. It is only this third component through which attitudes can be inferred. The conative component, is indicative of the individual's tendency to behave [act or not to act (to buy or not to buy)] in a particular manner with respect to the attitude object (product/service offering, brand etc.).

As per the model, the knowledge and the feeling component cannot be seen, they can only be inferred; it is only the behavioral component which can be observed.

Figure 2.2: Tricomponent Attitude Model



Source: Schifman, L.G. and Kanuk, L.L., Consumer Behavior, 9rd Edition, Pearson, Prentice Hall.

2.1.4. Project success

Project success was initially defined whether the final output of the project functioned or not. It then evolved into the triple constraint of time, cost and quality. PMI (2013) instructs that success criteria should be established at the very beginning of the project or before starting a new phase of the project. Doing so can improve deliverable acceptance, customer and stakeholder satisfaction (PMI, 2013).

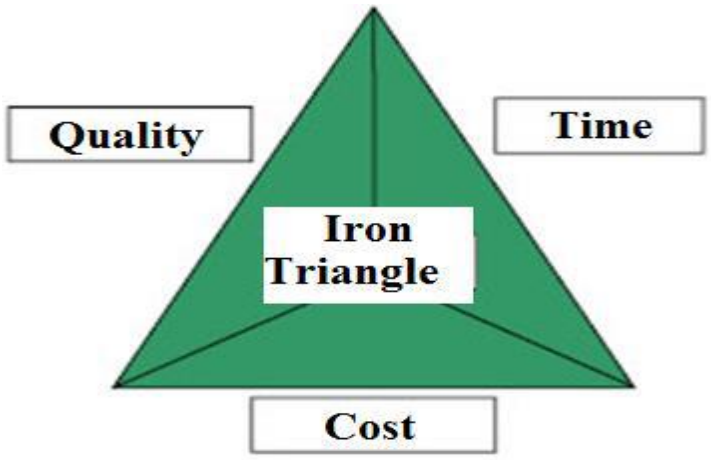
The concept of project success still remains ambiguously defined. It seems that the identification of project success is complicated (Neyestani & Juanzon, 2016). For the improvement of project delivery effectiveness studying project success and critical success factors should be considered (Saraf, 2013). By its nature, construction is a risky business. Current project management practices of organizations in the construction industry sector do not always ensure project success.

To evaluate the performance or success of a project, there is lack or absence of standard evaluating benchmarks. Due to this reason project managers' effort to succeed in managing construction projects is usually not coming true. The success of a project has been defined and the projects performance measured in various ways by different clients over the course of time has not been confirmed (Saraf, 2013).

The success of construction depends on its performance which is measured based on timely completion, within the budget, required quality standards and customers satisfaction. With project management research still in its early stages studies on project success focused on the three aspects of cost, time and quality, also called the "iron-triangle". These dimensions of performance are still considered highly relevant and frequently used in practice for assessment of project success (Atkinson, 1999). The Iron Triangle was originally conceived as a framework to enable project managers to evaluate and balance the competing demands of Cost, Time and Quality within their projects (Atkinson, 1999).

The Iron Triangle Centre to the concept of the Iron Triangle is the mutual dependency between the three constraints: increasing quality will increase the amount of time needed, which also will lead to an increase in cost. A tight time schedule could lead to a decrease in quality and subsequent increase in cost (Morris & Sember, 2008). However, the validity of the iron triangle and the traditional triple constraints of time, cost and quality, have been debated throughout the academic and industry literature on project management (Shenhar & Dvir, 2007).

Figure 2.3: Iron Triangle



Source: Project Management Competency Development Framework (PMCD) framework

As mentioned earlier project management success is measured according to the traditional "iron-triangle" of time, cost, and quality. To elaborate further on how project management success is measured.

Cost: To develop an approximation of a project cost depends on several variables including resources; work packages such as labor rates; and mitigating or controlling influencing factors that create cost variances. Tools used in cost are, risk management, cost contingency, cost escalation, and indirect costs (Yang, *et. al.,* 2012).

Time: Based on the study (Yang, *et. al.,* 2012), time is an important aspect of the construction process. For analytical purposes, the time required to produce a deliverable is estimated using several techniques. One method is to identify tasks needed to produce the deliverables documented in a work breakdown structure or WBS (Yang, *et. al.,* 2012).

Quality: Requirements specified to achieve the end result. The overall definition of what the project is supposed to accomplish, and a specific description of what the end result should be or accomplish. The amount of time put into individual tasks determines the overall quality of the project. Some tasks may require a given amount of time to complete adequately, but given more time could be completed exceptionally. Over the course of a large project, quality can have a significant impact on time and cost (or vice versa) (Yang, *et. al.,* 2012).

2.1.5 The Relationship between Project Manager Competencies and Project Success

There are several factors which influence whether a project is successful or not. Among them, project managers' competence is the key which often comes up. The notion is that project managers' competence directly influences project performance and subsequently organizational performance. It has been said that the key to project success is to pick the right project manager (Crawford, 2005).

Ionata (2006) have studied the relationship between personality, leadership style, and social power bases on the career success of project managers. While (Alfi, 2002) studied the relationship between project managers' tenure, education, training, experience, and project managers' success. Moreover, of related studies; (Coleman, 2014) studied the relationship between project managers' competence and education on career success. Brown, *et. al.,* (2007) investigated the relationship between human capital and time performance in project management and finally of the sample historical related studies,

Based on that, this study is proposed to study the effect of Project Managers' Competencies (Skills, Knowledge and attitude) on Project's success (Time, cost and scope/Quality).

2.2. Empirical Review

Some selected previous studies were researched to strengthen the topic. Therefore, this section focused on relationships among project managers' competencies on project success both from local and international studies: The following six previous studies have been chosen among the others, because they focus on the most factors that the research needs to analysis in order to link and explain the effect of the project manager's selected competencies on the project overall success.

Abebaw (2016) with a study titled "Assessment of the Roles and Competencies of the Project Managers as Success Factors in Development Projects of Addis Ababa/Ethiopia" showed some of the project manager's competencies demonstrate a positively significant relationship with certain project success variables in the context of Ethiopian development projects. Project requirement and objective, decision making in procurement and Information and communication among the technical competencies; leadership and communication among behavioral competencies and stakeholder analysis and management and power and authority among contextual competencies appeared as significant predictor of success.

Ehsan. *et. al.,* (2010) with a study titled "Effects of Project Manager's Competency on Project Success" expressed project manager's knowledge areas play a vital role in the successes or failure of projects and an experienced Project Manager will possess particular uniqueness that will enhance the team performance and his planning based on his project management skills that include integration, scope, time, cost, quality, human resource, communication management, risk and procurement management. All these areas contribute positively and significantly in project success.

Patanakul (2011) study titled: "Project manager assignment and its impact on multiple project management effectiveness" investigated that Project managers should not be assigned solely on experience and past successes. Further although the decision to assign a project is inherently strategic in nature, yet very important, there is still a lack of research pertaining to important factors on how to assign project managers. The methodology that was used is a analyzing a case study from historical data based for project based organization. It concluded the assigning the proper

project manager could present the organization with a challenge, regardless of the perceived impact assigning the project manager places on the organization as a whole.

Rahel (2017) with a study titled "An Assessment of Project Managers competency in Tekeleberhan Ambaye Construction PLC" expressed among factors contributing to project success, one of the most important is the effectiveness of the project manager. The investigation discussed in this paper reveals that a static list of project manager skills and competencies may not most effectively reflect the skills and competencies that will be most important for them on projects. This is particularly relevant because projects have differing characteristics and are delivered in a changing business environment, and different combinations of skills and competencies may be most important.

Narh (2013) study titled: "Competencies of an Effective Project Manager". The paper proposed a possible relation amongst the elements of these leadership competencies. Technical competencies, in conjunction with the Project Management Book of Knowledge (PMBoK), knowledge areas include scope, scheduling, risk, health and safety, communication, information, procurement management, value addition, and the management of the iron triangle of cost time and quality. This study used the interviewing methodology with hundreds of project managers. From these analyses, the paper summed up the key competencies of an effective project manager and briefly explains the relevance of each competence in project management.

Moreover, the project manager should be able to deal with all the problems and situations that might arise internally. Therefore, a project manager should have the necessary competencies in order to contribute to superior performance. Some previous studies showed a positive relation between project managerial competencies and the project success. Therefore, this study will explore and increase awareness of the project managers' competencies in building construction.

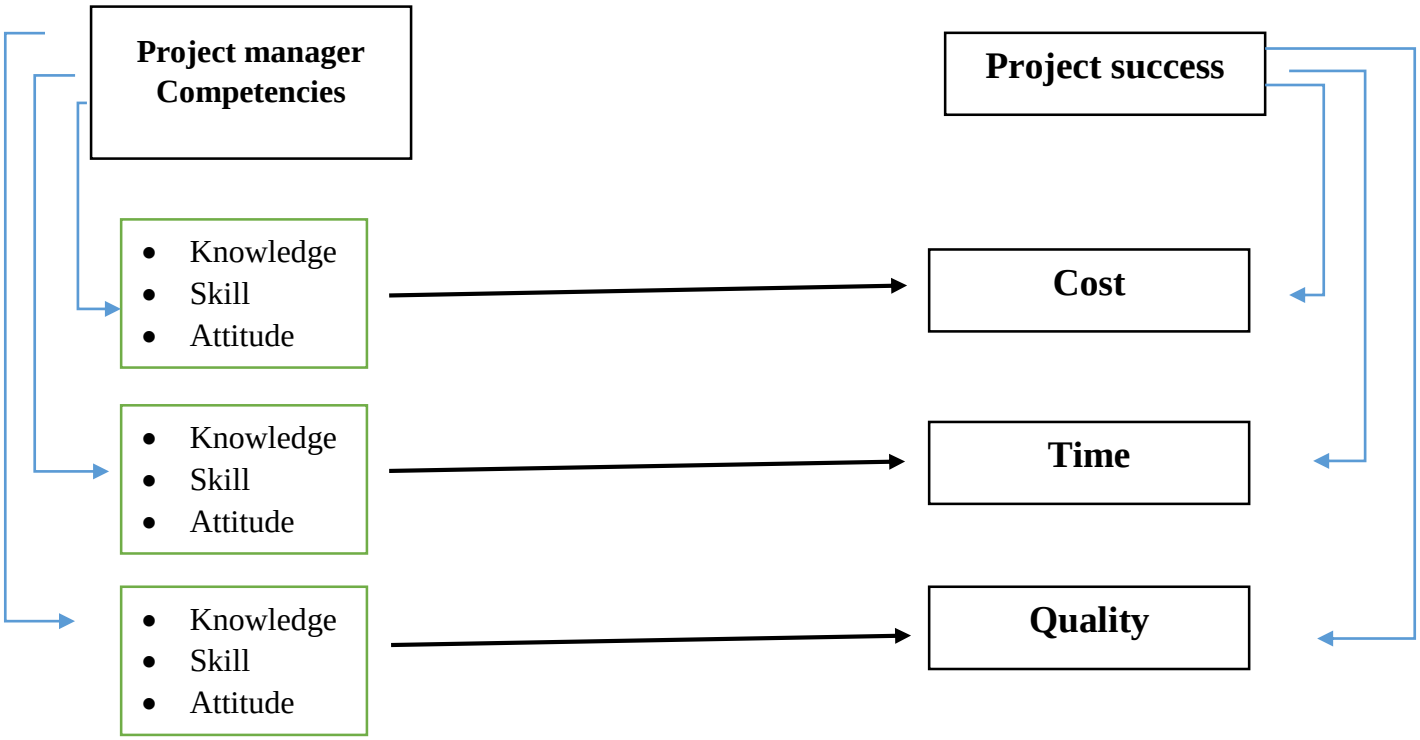
2.3. Conceptual Framework of the study

The study is designed to research the effect of Project Manager's competencies in construction project success specifically FE construction company. The definition of competence has been the object of continuing debate and remains a contentious topic in the organizational literature (Crawford 2005). The research defined competence as a combined set of an individual's

knowledge, skill, personal characteristics (Attitude) used to perform a specific task or activity (Capin, *et al.*, 2006).

In this study, we have taken a broad view of competency as: skills, knowledge, and attitude as an independent variable. And project success is considered as a dependent variable (based on the aspects of iron triangle). The aim of this section is to summarize the idea about past literature and to bring out the contributions for this study area. Thus, this part starts with the idea generated and the contribution follows.

Fig: 2.4 Conceptual framework of the study



Source: Derived from Cristina, C. and Drebes, C. (2015)

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

As Crawford (2005) stated research methodology is all about obtaining, organizing and analyzing data. This chapter describes the methods through which the objectives of the study can be answered. Accordingly, it states about the research design used, population and sampling procedures, data gathering methods and instruments, ethical consideration, validity and reliability of the study, and finally procedures/models of data presentation.

3.2 Research Approach and design

3.2.1 Research Approach

There are three research approaches: qualitative, quantitative, and mixed methods. The approaches are not totally opposite or are distinct categories but they are different ends of a continuum (Saunders, 2009). This study used both qualitative and quantitative research approaches. In this research, assess the effect of Project managers' competence on Project success in the case of FE construction, the data was collected using questionnaire adopted from Suhaib (2017) on his study "The Impact of Project Managers' Competencies on Project's success". The objectives of the study and the availability of relevant information of this study used quantitative and qualitative research. Saunders (2009) described quantitative research is a formal, systematic process that describes the relationships among variables. Quantitative methods emphasize objective measurements and the statistical, mathematical or numerical analysis of data collected through survey (Creswell, 2009). Quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures (Creswell, 2009). Different research works reviewed to adopt the survey questionnaire instead of developing a new one which will help in getting a concrete finding and was amended the questionnaire to suit the culture of Ethiopia and the country in general. So, in order to meet the objective of the study, answer the given research question and to examine the relationship between the dependent variable and the independent variables the study apply Quantitative research method.

Qualitative research involves collecting and analyzing non-numerical data (e.g., text, video, or audio) to understand concepts, opinions, or experiences. It can be used to gather in-depth insights into a problem or generate new ideas for research. Qualitative research allows you to ask questions that cannot be easily put into numbers to understand human experience (Creswell, 2009).

3.2.2 Research Design

Cooper & Schindler (2014) summarize the essentials of research design as an activity and time-based plan. Always based on the research question, it guides the selection of sources and types of information. A framework for specifying the relationship among the study variables and outlines the procedures for every research activity.

Since the main objective of this research was to assess the effect of Project Manager's Competencies on the success of a project, explanatory research design was appropriate. As a result, to analyze this relationship quantitative type of research design was deployed. It also estimates the frequency or proportion and association of variables or it makes some specific predictions (Babbie, 2011). As a result, this design enables to assess and explain the effect of Project Manager's Competencies On the success of a project in FE Construction Company.

3.3 Research population and sampling technique

Neuman (2000) defined Target population as "a set of all elements that belong to a certain defined group to be studied and used to generalize the result of the study." FE construction P.L.C , a grade I Building contractor, has some projects that are under construction and constructed many projects with various locations. The research focuses only ongoing huge constructions that are located in different areas within Addis Ababa city. The target group of the study are skilled in construction projects. To show the success of project manager's competency, respondents should have the skill and be directly involved in the projects with the collaboration to project manager. The target group of the study are project managers, site engineers, office engineer and project coordinator (that have a direct work relation with project managers) , in the construction projects. Therefore the total numbers of population in this study are 50.

The sampling technique is purposive sampling which is categorized under non-probability sampling. The main reason for selecting this method is due to its time and cost advantage. According to Saunders (2009), it is appropriate if the research is aimed at explaining a phenomenon rather than making a generalization (Best and Kahn, 2006).

3.4 Data collection

The study aimed to assess the effect of project manager competency on project success of a single construction firm. Both primary and secondary data were collected. First, secondary data were collected through literature review from different books, journals, internet, etc. to reviewing the research that discussed the effect of project manager competency in construction projects in FE construction plc. (theoretical background), for concept development and for the preparation of the questionnaires and it also be used to limit questions that will be raised in the study and finally used to recommend better strategies for managing change.

Then primary data was gathered through questionnaires. Questionnaires was used as a primarily data collection instrument. Neuman (2000) recommends use of questionnaires for its potential to reach out to a large number of respondents within a short time; ability to accord respondent's adequate time to respond; offers a sense of privacy and confidentiality to the respondent. Therefore, the instrument was selected as a quick and cost-effective way to collect data.

To fulfill the purpose of the current research 50 questionnaires were distributed, and only 45 were returned, leading to 90% response rate. After checking the filled questionnaires, all of them found suitable and coded against SPSS for further analysis.

3.5 Ethical consideration

This research followed ethically and morally acceptable processes throughout the research process. The data was collected with the full consent of the participants. In this regard, the names of the respondents were not listed, and Information was not available to anyone who was not directly involved in the study. In order to safeguard the rights of the participants, the benefits of the study were also explained to the participant.

In addition, the study used proper citation, follow truthful collection and analysis of data, obtain the consent of the case organization and staffs and keep the identity of respondents unanimous based on their consent to meet the ethical obligations of the research.

3.6 Data analysis

The basis for quantitative data analysis is generally numbers, collected either by numerical or statistical approaches. (Saunders, 2009).

After the necessary and adequate data are captured, the data was organized in a suitable way to analyze using quantitative and qualitative data analysis methods. Frequencies and percentages used to present quantitative data in the form of tables. The data was collected and analyzed using quantitative and qualitative data analysis methods. The data analysis for the questionnaire was done with the help of SPSS (Statistical Package for Social Science).

Also the questioners include some interview question analyzed by qualitative method. On the other hand, qualitative data is based on meanings expressed through words, gathered through non standardized collection methods, and analyzed through conceptualization techniques (Saunders, 2009).

In inferential statistical analysis, correlation and multiple linear regression methods were utilized using statistical package for social sciences (SPSS) software. The use of these statistical tools and methods of presentation are described below.

a) Correlation

Correlation (r) is used to describe the strength and direction of relationship between two variables. Since all variables are measured as an interval level, Pearson product moment correlation was used. Correlation "r" output always lies between -1.0 and +1.0 and if "r" is positive, there exists a positive relationship between the variables. If it's negative, the relationship between the variables is negative. While computing a correlation, the significance level shall be set at 95% with alpha value of 0.05 or a chance of occurrence of odd correlation is 5 out of 100 observations (Saunders, 2009).

b) Multiple Regression Analysis

Multiple regression analysis is a major statistical tool for predicting the unknown value of a variable from the known value of variables. And regression analysis selected because it is the best

alternative to examine the impact analysis between a dependent variable and a set of independent variables (Saunders, 2009).

3.7 Validity and Reliability of the study

3.7.1 Validity

Zikmund (2003) has defined validity as "The ability of scale or measuring instrument to measure what it is intended to measure". The study was done only in FE construction plc. ; Therefore, the population is homogenous and helps to have a robust and valid data. All possible efforts were exerted to make the data collection instruments easily understandable by the respondents so that the intended information can be collected thereby increasing trustworthiness of the ultimate findings. Different procedures have been taken to guarantee the validity of this research. First, literature review was used to assure content validity. Second, questionnaire was adjusted and the validity was verified based on the context of the company. In addition, it was assessed and examined by the research advisor and senior project managers prior to the data collection to examine the instrument for the content validity and ethicality. Also, all reference materials are acknowledged with proper citation

3.7.2 Reliability

According to Zikmund (2003) the definition of reliability is "The degree to which measures are free from errors and therefore yield consistent results". Cronbach's alpha is a coefficient that is used to measure reliability or internal consistency of items; it indicates how closely the items are related to each other, and how free they are from bias (Sekaran & Bougie, 2009). If Cronbach's alpha value is more than 60% for all variables, then reliability is assumed. (Tavakol & Dennick, 2011).

Table (3.1) shows that Cronbach's Alpha coefficients for all variables are more than 70%, therefore reliability is assumed. (Tavakol & Dennick, 2011).

This study used survey questionnaires which are already tested and applied on an international research level. 10 pilot tests were distributed for the selected stuffs subject matter experts to ensure

the internal consistency of items which is the level of homogeneity of a scale was measured to be checked by using Cronbach's alpha coefficient on SPSS.

Table 3.1: Cronbach's Alpha coefficient

NO	Variable	No of item	Cronbach's Alpha
1	Skills	7	0.844
2	Knowledge	7	0.787
3	Attitude	7	0.845
4	**Competencies**	**3**	**0. 706**
5	Cost	4	0.965
6	Time	4	0.661
7	Quality	4	0.635
8	**Project success**	**3**	**0.706**

Source: Own Survey, 2021

CHAPTER FOUR: RESULT AND DISCUSSION

The results and discussion below is devised in four parts corresponding to the research questions and also the sections of the questionnaire. This section deals with the analysis and interpretation of data collected from the survey questionnaire. Responses for the measures on the questionnaire are summarized and presented using tables to facilitate easy understanding.

Of the 50 questionnaires distributed, 45 questionnaires were correctly filled and returned. Therefore, this indicates that response rate is 90%. According to Mugenda (2003) a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent; therefore, this response rate is adequate for analysis and reporting. The questionnaire was developed using five scales ranking i.e. Linkert scale; where 1 represents strongly disagree, 2 Disagree, 3 Neutral, 4 Agree and 5 Strongly Agree. To analyze the collected data with that of the objective set for this research, Statistical procedures were carried out using SPSS Statistics.

4.1. Respondents' Demographic Description

It include gender, age, educational level, work experience, work position and maximum size of the project lead distribution of the survey questionnaire respondents.

Gender: - It can be seen from the Table (4.1), majority of the respondents are male (n=30, %=67%) and 33% (n=13) are female. So, it indicates that employees working in the organization of construction projects most of them are male. It showed that gender inequality in organization is a phenomenon that can be seen in organization construction projects.

Table 4.1 Gender

Gender	Frequency	Percentage
Male	30	67
Female	15	33
Total	**45**	**100**

Source: Own Survey, 2021

Age: - Demographic analysis of the forthcoming data shows most frequent age groups in the sample were from (31-35) with 33%. The second most frequent age groups were (26-30) and (36-40) with 18% frequency. The third age groups were from (18-25) and (41-45) with 11% frequency. And the least frequent age groups above 46 ages with 9% frequency as shown in table 4.2. Generally, 80% of the respondents are below the age 40 which shows that the work force is composed of mainly young employees which is an advantage for the company in a dynamic business environment since young workforce is believed to be easily adaptive to change and willing to face new business challenges.

Table 4.2 Age

Age	Frequency	Percentage
18-25	5	11
26-30	8	18
31-35	15	33
36-40	8	18
41-45	5	11
Above 46	4	9
Total	**45**	**100**

Source: Own Survey, 2021

Educational level: - The data in (Table 4.3) show that 28 respondents (62.5%) have a Bachelor's degree and 17 respondents (37.5%) have Master's degree. This shows that majority of the respondents are educated to a level of Bachelor's degree. None of the respondents have postgraduate diploma or any other qualifications. With regard to the respondents' educational background it shows that respondents are literate enough in order to understand and answer the research instruments correctly and respondents with different educational background are represented in the study. The respondents have appropriate educational and professional levels to identify and describe project manager's competency on the success of construction projects in FE Company as required to answer the research questions.

Table 4.3 Respondents educational level

Educational Level	Frequency	Percentage
Bachelor's degree	28	62.5
Master's degree	17	37.5

Total	**45**	**100**

Source: Own Survey, 2021

Over all work experience: - The other part of the demographics section listed below on table (4.4). Indicates the overall working experiences in any construction companies. It shows 5 respondents with 5 years' work experience found (11%), 8 respondents having 6 to 10 years work experience found (18%). 11 Respondents between 11 to 15 years work experience found (24%). 13 respondents having 16 to 20 years work experience found (29%). The rest 8 respondents served 20 years and having a longer experience found (18%). The results show that most of the respondent have more than ten year overall working experience. It shows that the participants well experienced. The experience possess by the respondents may help in providing a better understanding of this matter and in better position in giving much precise answer required to the questionnaires form.

Table 4.4 Respondents over all work experience (year)

Over all experience	Frequency	Percentage
Less than 5 years	5	11
6 years- 10 years	8	18
11 years- 15 years	11	24
16 years- 20 years	13	29
Above 20 years	8	18
Total	**45**	**100**

Source: Own Survey, 2021

Work experience in FE construction plc.: - The data Table 4.5 showed that the majority of the respondents' 24 (53%) were having 6 – 10 years experiences in FE construction company then those 8 (18%) of respondent have less than 5 years' experience in FE construction plc. 13(29%) of respondents have 11- 15 year experience in the FE construction company. Most of the respondent working in FE construction company more than six years so it indicate that the participants well know the organization. Also indicates that the respondents have sufficient work experiences ranging in the construction sector. Hence they are deemed to be well familiarized to the organization and project managers working in FE construction.

Table 4.5 Respondents work experience in FE construction (year)

Over all experience	Frequency	Percentage
Less than 5 years	8	18
6 years- 10 years	24	53
11 years- 15 years	13	29
16 years- 20 years	0	0
Above 20 years	0	0
total	**45**	**100**

Source: Own Survey, 2021

Position:- The data Table 4.6 showed that the questionnaire of this research were filled by 45 respondents; from the total respondents 23 of them were project managers (51%), while 6 of them are project Coordinators (13%) according to the samples. 8 respondents were site engineers with (18%) and the rest 8 respondents were office engineers with (18%). Generally half of the respondents are project manager and the rest of them are office engineer, site engineer and coordinator. They have direct connection or collaborated with project managers by work in construction projects in the organization.

Table 4.6 Position

Position	Frequency	Percentage
Project managers	23	51
Project Coordinators	6	13
Office engineer	8	18
Site engineer	8	18
Total	**45**	**100**

Source: Own Survey, 2021

Project size: - The data Table 4.7 showed that Evaluation of projects based on their budgets or complexity misleads to unfair judgment, due to some projects that have a higher budget with low complexity, and vice versa. It was found when evaluated from the responses that very large size of projects precede very large constituting percentage of 73% from the total sample, large projects

constituting with 18% followed. Finally, category of intermediate project size least covers with 9% of the total sample as presented in table 4.7 below.

Table 4.7 Project Size

Size of project	Frequency	Percentage
Small	0	0
Intermediate	4	9
Large	8	18
Very large	33	73
total	**45**	**100**

Source: Own Survey, 2021

4.2. Descriptive Analysis of Project Managers' Competencies

Table (4.8) shows the mean values of Project Managers' Competencies are within the range of "3.90 to 3.99" variables and standard deviation ranges between "0.811 to 0.836". It means there is an agreement among respondents about medium importance of the Project Managers' Competencies variables. The average mean value of Project Managers' Competencies were 3.94 with standard deviation of 0.822, these means there is high importance for Project Managers' Competencies. From all variables, the maximum response for skill is Strongly Agree and the minimum response for attitude Disagree.

As per the result, all the listed dimensions of competency are equally important that respondents considers and moderately agree to the points raised. Generally, deviation from average mean value is not much far by significant figures.

Table 4.8: Project Managers' Competencies

Competency variables	Minimum	Maximum	Mean	Std. Deviation	Rank
knowledge	3	5	3.92	.818	2
skill	3	5	3.90	.811	3
attitude	2	5	3.99	.836	1
Project Manager Competencies			**3.94**	**.822**	

Source: Own Survey, 2021

4.2.1. Knowledge

Table (4.9) shows the means of respondents' perception about the degree for implementation of knowledge that ranges from 3.63 to 4.19 with standard deviation ranges from 0.751 to 0.856. Such results indicate that there is an agreement between respondents in the importance of Knowledge items. The average mean of the total knowledge variable items is 3.92 with standard deviation 0.802. As per the response, the study tries to indicate knowledge competency in relation to the effect of project success on points like investigating facts, making judgments, setting objective as per the plan, identifying and managing stakeholders, set priority that have future vision for the success of the project stated on the literature review. The result justifies that, project managers should agree on the points listed and apply their knowledge to fulfill the project with great success.

Table 4.9: Project Manager Knowledge Competency

Items requested	Mean	Std. Deviation
The project manager investigates facts	4.13	.833
Makes judgments based on reasonable assumptions, and is aware of the impact of such assumptions	4.19	.780
The project manager sets objectives based on the overall strategic plan	3.88	.793
Identifies the positives and negatives of ideas	3.81	.821
Identifies opportunities and threats, and is sensitive to stakeholder's needs	4.09	.856
Has sound priorities for future work while being able to expect the impact of external and internal changes on the vision	3.63	.751
Has a clear vision and imagination for the future direction of the organization	3.69	.780
	3.92	**.802**

Source: Own Survey, 2021

4.2.2. Skill

Table (4.10) shows means for respondent' perception about the degree of implementation of skills items ranging from 3.66 to 4.19 with standard deviation ranges from 0.780 to 0.856. Such result coincides with skills items. The average mean of the total skills variable items is 3.88 with standard deviation 0.807.

According to the responses, project managers' have positive feedbacks in providing direction for the subordinates, inspiring and initiating others for work, tracking weakness in helping staffs to be

consistent on their work. Also, they are responsible and attentive on areas of communication, encouraging attempts of new ideas, support creative thinking for problem solving and personal commitment. Though, they have to develop their problem solving ability with own personal commitment on their duty.

Table 4.10: Project Manager Skill Competency

Items requested	Mean	Std. Deviation
The project manager communicates with their teams frequently	3.81	.821
The project manager encourages creative ideas	3.88	.793
The project manager provides direction to inspire others.	4.09	.856
The project manager uses creative thinking process to solve problems	3.66	.787
The project manager tracks his weaknesses and strengths	4.19	.780
The project manager preforms consistently in a range of situations under pressure and adapts behavior appropriately	3.91	.818
The project manager shows personal commitment to pursuing an ethical solution to a difficult business issue or problem	3.88	.793
	3.88	**.807**

Source: Own Survey, 2021

4.2.3. Attitude

Table (4.11) shows the means of respondent' perception about the degree of implementation on Attitude items ranging from 4.31 to 3.78 with standard deviation ranges from 0.738 to 0.941. Such result indicates an agreement with high importance of attitude competency items. The average mean of the total attitude variable items is 3.99 with standard deviation 0.826 that indicates an agreement on high importance of this variable. The response shows that the respondents agreed on attitude competency with major points such as on job involvement, organizational commitment, job satisfaction and knowing the roles in stretching the target in order to success the project. To be success in caring out the project throughout the project life time and also stretching beyond expectation, they need support from their immediate supervisors due to their job description, and also has the obligation in developing others with their support to complete the work effectively.

Table 4.11: Project Manager Attitude Competency

Items requested	Mean	Std. Deviation
Enthusiastic in Job involvement on identifying with one's job and know team members' strengths and weaknesses	4.31	.738
Showing organizational Commitment in Sense of pride and obligation for project success	3.94	.801
Showing Job satisfaction by developing and growing to utilize the expertise and get personal gains	4.09	.856
PM know his role and carried out as part of the description and beyond that are not part of his job specification.	4.13	.833
Disposition towards people in identify, support and contribute with people responsible at the organization for getting the work done	3.78	.941
Linking the concept of individual, team and organization with project aspects.	3.81	.821
Invests time in developing others' competencies, and effort in coaching them	3.88	.793
	3.99	**.826**

Source: Own Survey, 2021

To summarize the dimensions for competency, responses from respondent's portrait moderately agree to the points raised in implying project manager competency which is necessary based on the mean comparison of the independent variables shown in table 4.8 above. Attitude ranks first with (3.99) followed by Knowledge with (3.92) and finally Skill with (3.90) seen in the above mentioned table respectively. In accordance with the response given, most respondents agree on their opinions. This implies that the competency areas need improvements even if there is a gap.

4.3. Descriptive Analysis of Project Success

According to Table (4.12), the mean value of the Project Success variables is ranging between 3.61 to 3.98 and standard deviation ranging between "0.860 to 0.966". The below result show that there is a moderate agreement among respondent about medium importance of the Project success variables. The average mean of Project success variables is 3.76 with standard deviation 0.908, which also mean there is a medium importance for Project success. On the other hand, some of the respondents disagreed on the statements which Projects under their division completed on the specific timeline with little cost modification and quality as expected.

Table 4.12: Project's Success

Items	Minimum	Maximum	Mean	Std. Deviation	Rank
cost	2	5	3.74	.898	2
time	2	5	3.61	.966	3
quality	2	5	3.98	.860	1
Project success practices			**3.76**	**.908**	

Source: Own Survey, 2021

Cost: Table (4.13) shows that the means of the respondents' perception about the degree of the implementation of cost items are; there were no major with- cost change requests during the project mean is 4.25 with 0.672 standard deviation, Project manager's experience helped to eliminate unnecessary resources mean is 3.78 with 0.941 standard deviation, The project was finished on or under budget mean is 3.63 with 0.751 standard deviation and The Project decreased the cost of some activities with no effect on quality mean is 3.31 with 0.965 standard deviation. From the listed cost item the highest mean given from the respondent is, there were no major with- cost change requests during the project and the average mean of the total cost variable items is 3.74 with standard deviation 0.898, which indicates that there is agreement of this variable.

Table 4. 13: Mean and Standard Deviation of the cost Items:

Cost items	Mean	Std. Deviation
There were no major with- cost change requests during the project	4.25	.672
Project manager's experience helped to eliminate unnecessary resources.	3.78	.941
The project was finished on or under budget	3.63	.751
The Project decreased the cost of some activities with no effect on quality.	3.31	.965
	3.74	**0.898**

Source: Own Survey, 2021

Time: Table (4.14) shows that the means of the respondents' perception about the degree of the implementation of time items are; the project met most of the scheduled milestones mean is 3.78 with 0.941 standard deviation, the project was finished on time mean is 3.31 with 0.965 standard

deviation, The Project boosts the employees' abilities by helping to save time mean is 3.94 with 0.801 standard deviation and the critical tasks and delivery dates were not slipping mean is 3.41with 1.043 standard deviation. From the listed time item the highest mean given from the respondent is, The Project boosts the employees' abilities by helping to save time and the average mean of the total time variable items is 3.61 with standard deviation 0.966, which indicates that there is agreement on medium importance of this variable.

Table 4. 14: Mean and Standard Deviation of the time Items:

Time item	Mean	Std. Deviation
The project met most of the scheduled milestones	3.78	.941
The project was finished on time	3.31	.965
The Project boosts the employees' abilities by helping to save time	3.94	.801
The critical tasks and delivery dates were not slipping.	3.41	1.043
	3.61	**0.966**

Source: Own Survey, 2021

Quality: Table (4.15) shows that the means of the respondents' perception about the degree of the implementation of quality items are; the Project was handed upon the company's overall standards mean is 3.98 with 0.818 standard deviation, the project deliverables always fulfil the customer requirements mean is 3.78 with 0.941 standard deviation, the project meets its business objectives mean is 4.09 with 0.856 standard deviation and Setting alternative plans has reduced the unexpected risks possibility mean is 4.15 with 0.807 standard deviation. From the listed quality item the highest mean given from the respondent is, setting alternative plans has reduced the unexpected risks possibility and the average mean of the total quality variable items is 3.98 with standard deviation 0.860, which indicates that there is agreement of this variable.

Table 4. 15: Mean and Standard Deviation of the Quality Items:

Quality item	Mean	Std. Deviation
The Project was handed upon the company's overall standards	3.91	.818
The project deliverables always fulfil the customer requirements	3.78	.941
The project meets its business objectives	4.09	.856

Setting alternative plans has reduced the unexpected risks possibility	4.15	.807
	3.98	**0.860**

Source: Own Survey, 2021

Based on the result, there are some cost changes on the project time, this may be due to less cost at the bid time and the cost will add some at the time of implementation when they requested for a change. This shows, planning should be done carefully and at the time of agreement signature all the details should be included. Also, most of the project will be completed on the planned budget. Due-to cost saving strategy of the company and experience of project managers working with different project, they will eliminate unnecessary resource wastage; in addition, working with different project develops their experience well. As a result, this is the highest score among the requests.

As per the result, working on different projects help project managers to develop skills in order to resolve project delays. But due-to the nature of projects respondents have neutral response in the project delivery and completion dates.

In summarizing project success, higher scores related to quality of the work than project cost and timeline. This implies project success in the company majorly focuses on the quality of the deliverable and then followed by cost of the project and finally the whole project timeline.

4.4. Relationship between Project Managers' competencies and Project Success

One of the major objectives of the study is to assess the effect of Project Managers' Competencies on Project success. For this purpose, Pearson correlation coefficient and regression analysis have been used, Pearson correlation coefficient was used to test the relationships between independent variables and dependent variables. The results are presented in the below sections.

4.4.1. Pearson Correlation analysis

Correlation analysis studies the joint variation of two or more variables for determining the strength and direction of the relationship among the variables (Kothari, 2004). Accordingly, in order to identify whether the dependent variable and independent variables have a relationship,

Pearson's product moment correlation coefficient was computed. Pearson correlation results range between 1 (perfectly linear positive correlation) to -1 (perfectly linear negative correlation). When the correlation value is 0, no relationship exists between the variables understudy and when the correlation value is lies in the middle between 1 & -1 (excluding 0) the below interpretation guide. (Table 4.16) developed by Marczyk, Dematteo, and Festinger (2005) becomes handy. Accordingly, this guide has been used to interpret the results which are summarized in the coming sections.

Table 4.16: Correlation result interpretation guide

Correlation value in range	**Interpretation**
0.00 to 0.19	Weak/ very low correlation
0.20 to 0.39	Low correlation
0.40 to 0.59	Moderate correlation
0.60 to 0.79	High correlation
0.8 to 1.0	Very high correlation

Source: Marczyk, DeMatteo, Festinger (2005)

Table (4.17) shows that the relationships between independent variables are very strong,. The relationships between dependent dimensions are also strong to very strong,

Table 4.17: Pearson's Correlation among independent and dependent Variables

Correlation

		knowledge	Skill	attitude	cost	time	quality	Pm competencies	Project success
Knowledge	Pearson Correlation	1							
	Sig. (2-tailed)								
Skill	Pearson Correlation	.674**	1						
	Sig. (2-tailed)	0.000							
Attitude	Pearson Correlation	.748**	.734**	1					
	Sig. (2-tailed)	0.000	0.000						

Cost	Pearson Correlation	0.535	0.512	.6954**	1				
	Sig. (2-tailed)	0.000	0.000	0.000					
Time	Pearson Correlation	.767**	.670**	.657**	.683**	1			
	Sig. (2-tailed)	0.000	0.000	0.000	0.000				
Quality	Pearson Correlation	.874**	.674**	.774**	.950**	.964**	1		
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000			
Pm competencies	Pearson Correlation	.814**	.830**	.754**	.786**	.766**	.810**	1	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000		
Project success	Pearson Correlation	.814**	.830**	.770**	.988**	.993**	.982**	.924**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Own Survey, 2021

As witnessed on the above table (4.17) which depicts the relationship between project managers' competencies and project success. The data confirmed that the correlation between project managers' competencies ranges Based on table (4.16) interpretation guide there is positive moderate correlation between the independent variables. This also shows there is positive high correlation. However, the fact that there is significant positive relationship between dependent and independent variables does not indicate or measure the cause effect relationship. Hence, beyond correlation analysis, regression analysis is conducted to measure the cause effect relationship between project managers' competencies and project success. Narh (2013) showed the key competencies of an effective project manager and briefly explains the relevance of each competence in project management. Also, Cech and Chadt (2015) result showed that high performance competencies enable the project managers to manage their projects efficiently.

Wiangnak and Lekcharoen (2014) on their study showed that knowledge areas, technical and managerial skill and personal attributes has direct influence on the efficiency of project

management. Therefore, project managers' competencies were positively correlated and affected efficiency of project success.

4.4.2. Multiple Regression analysis

Multiple regression analysis is a major statistical tool for predicting the unknown value of a variable from the known value of variables. And regression analysis selected because it is the best alternative to examine the impact analysis between a dependent variable and a set of independent variables (Saunders, 2009). The goal of multiple regression is to enable a researcher to assess the relationship between a dependent (predicted) variable and several independent (predictor) variables. The end result of multiple regression is the development of a regression equation (line of best fit) between the dependent and independent variables (Pallant, 2005).

4.4.2.1 Tests of Regression Model

Before using multiple regression analysis, the researcher has conducted basic assumption tests for the model. These are normality of the distribution, linearity of the relationship between the independent and dependent variables and multi collinearity tests. Each test is explained below.

A. Normality Distribution (Histogram) Test

Multiple regressions require the independent variables to be normally distributed. If the underlying distribution of the data is normal, the points will fall along a straight line. Deviations from this line correspond to various types of non-normality. Stragglers at either end of the normal probability plot indicate outliers. The histogram in the figure shows in appendix 2 that the data were normality distributed, since the residuals do not affect the normal distribution and errors are independent.

B. Linearity of the Relationship Test

The second assumption for computing multiple regressions is test of the linearity of the relationships between independent and dependent variables is linear relationship. The normal P-P plot shows there exists a linear relationship between project managers' competence and project success. The normal P-P plot is shown in Appendix 2.

C. Multi-collinearity Test

Multi-collinearity refers to the situation in which the independent/predictor variables are highly correlated. In order to check if there is multi-collinearity among the variables, tolerance & variance

inflation factor (VIF) values were examined. According to Pallant (2005), tolerance is an indicator of how much of the variability of the specified independent variable is not explained by another independent variable in the model and if its value is less than 0.1, it indicates that the multiple correlation with other variables is high, implying possibility of multi-collinearity. Whereas, VIF is the inverse of tolerance value (1 divided by tolerance). If VIF value is above 10, it signals chance of multi-collinearity. Accordingly, the result in table (4.18) shows that there is no possibility of multi-collinearity among the variables in the model since all the tolerance values are above 0.1 and the corresponding VIF values are below 10. Therefore, for the current data multi-collinearity is not an issue.

Durbin-Watson test

The assumption of autocorrelation is that the covariance between the error terms over time is zero. It is assumed that the errors are uncorrelated with one another. If the errors are correlated with one another, it would be stated that they are "auto correlated" or that they are serially correlated (Brooks ,2008). To confirm either there is auto correlation or not the Durbin Watson test (DW) rule for autocorrelation was applied in this study and the null hypothesis being there is no autocorrelation. The regression result of DW as shown in table 4.18 above was 1.676 DW test result fall in the non-rejection region.

Table 4.18: Multi collinearity test

Model		Collinearity Statistics		Durbin- Watson
		Tolerance	VIF	
1	(Constant)			
	knowledge	0.576	1.745	1.676
	skill	0.567	1.876	
	attitude	0.676	1.511	

a. Dependent Variable: project success

Source: Own Survey, 2021

4.4.2.2 Multiple Regression

On this study aimed to identify the effect of Project manager's competencies (knowledge, skill and attitude) on a project success. Accordingly, on the correlation analysis section, it is identified that all the independent variables have significant positive correlation with project success. Based on this, multiple regression has been conducted to know their impact on project success. Accordingly,

adjusted R2 values were referred to indicate the percentage variance in the dependent variable (Success) explained by the independent variables (which are knowledge, skill and attitude) and the statistical significance of this relationship is also tested.

The Main Hypothesis:

H0: Project manager's competencies do not affect project success, at ($\alpha \leq 0.05$)

Table (4.19) shows that the adjusted R square was 0.870 the model estimated shows that there was 87.0 % positive variation in project success as a result of changes in the project managers' competence as explained by model. 13 % of the variation in project success was explained by other factors other than project managers' competence. In other way, it is noted that 87.0 % of the changes in the project success variables could be attributed to the combined effect of the predictor variables or there is 87.0 % of variation in project success due to project managers' competence. Inferring from table: 4.19, adjusted R2 value of 0.870 then the independent variable can explain 87.0% of variance on dependent variable, success is explained by project managers' knowledge, skill and attitude. Where (R2=0.87, F=89.789, Sig. =0.000, P<0.001). Therefore, the null hypothesis is rejected and the alternative is accepted which states "project manager's competencies affect project success, at ($\alpha \leq 0.05$)"

Table 4.19: Results of Multiple Regressions Analysis Project manager's competencies against project success.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.986[a]	0.870	0.860	0.447	0.870	89.789	3	28	0.000	1.676

a. Predictors: (Constant), attitude, skill, knowledge

b. Dependent Variable: project success

Source: Own Survey, 2021

ANOVA

The regression model overall fit can be examined with the help of ANOVA. Accordingly, table 4.19 of this study shows that the value of R and R2 found from the model summary is (F=89.789), (P<0.001). This indicates that over all, the regression model statistically significantly predicts the outcome variable.

Table 4.20 ANOVA Model fit

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.745	3	6.915	89.789	.000[b]
	Residual	4.605	28	0.022		
	Total	21.350	31			

a. Dependent Variable: project success

b. Predictors: (Constant), attitude, skill, knowledge

Source: Own Survey, 2021

Sub-Hypothesis:

Standard Beta Coefficient: - It indicate the contribution of the variables in the model for the prediction of the dependent variables which enables to rank the variables based on their contribution (Pallant, 2005). Not all factors are retained in an analysis and only factors that are statistically important should be retained. The standardized coefficients are the coefficients which can explain the relative importance of explanatory variables. These coefficients are obtained from regression analysis after all the explanatory variables are standardized.

Table 4.21 Beta Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.194	0.278		0.596	0.508		
	knowlege	0.320	0.088	0.380	3.938	0.000	0.576	1.745
	skill	0.340	0.075	0.416	4.567	0.000	0.567	1.876
	attitude	0.293	0.792	0.367	3.845	0.000	0.676	1.511

Source: Own Survey, 2021

From the above table (4.21), it can be concluded that all the project managers' competencies have an effect on project success in FE construction plc. In short, the results indicate that Project Managers' Competencies (Knowledge, Skill and Attitude) influence Project Success. Besides, the individual t-test significance values, which are all below 0.01, imply that the practices are positive significant predictors of project success. Langer, *et. al.*, (2008) suggest that while hard skills such as technical expertise may be essential in a PM, soft skills, such as tacit knowledge of organizational culture and clients, are more important for project success.

Skill takes the higher share in contributing for project success since it has the highest standardized coefficient beta value. Table (4.21) shows that there is a positive direct effect of knowledge competencies on project success, since (*B*=0.416, t=4.567 and sig.0.000). As per the output of the standard Beta coefficient, 41.6 % of the total variation of project success is explained by skill competency. This indicates that the construct is with high impact to the overall project success.

According to the finding, the next highest determinant factor of project success is Knowledge. Table (4.21) shows that there is a positive direct effect of knowledge competency on project success, since (*B*=0.380 t=3.938 and sig.0.000). Knowledge makes a contribution of 38% of the total variance project success.

Finally, Table (4.21) shows that there is a positive direct effect of attitude competency on project success, since (B=0.367, t=3.845 and sig.0.000). Attitude competency made a contribution of 36.7% of the total variance. The attitude of a project manager directly affects their ability to manage the project effectively and efficiently. Furthermore, their personal characteristics are fundamentally linked to their personality.

CHAPTER FIVE: SUMMARY, CONCLUSION & RECOMMENDATION

In previous chapter, data analysis and interpretation has been presented. In this chapter, major findings are summarized and the subsequent conclusions will be made. Based on the conclusion, recommendations are forwarded in relation to literatures reviewed to better enhance the organizations project success.

5.1. Summary

In this section, the objectives of this research are discussed through the presentation of the results that are obtained and explored in the previous sections, in order to derive the recommendations and implications based on the findings of this research.

This research aimed to assess the effect of project managers' competencies on project's success, and to identify the main competencies of a project manager that are associated with successful projects in order to keep project managers alert to what competencies to develop, consequently, this may reflect on the performance of the teams working with them. Based on the regression analysis, the results of project managers' competence effect on project success ranked as:

1. Skill competency have the highest weight with more effect on the project success based on the result of this study. In relation with different literatures, both soft and hard skill are mandatory on having a success of the project. Since communication is a major and leading part on project management activities, respondents given more weight for this issue. In order to be consistent Creative thinking, inspiring others to motivate, showing commitment are necessary for the success of any project. Working more on project competency increases the effect of the success efficiently.
2. Knowledge competency, making judgments based on reasonable assumptions is found to be well practiced in the project environment since project manager is responsible for any activity from start to end. Likewise, investigating fact is with high weight next to judgment since every project is unique and respondents majorly focus on this to have success and is perceived as effective in enhancing the organization's productivity. Points like identifying opportunity and treat, setting objectives, identifying ideas and aligning projects with future direction have positive feedback related to knowledge competency and have high importance next to attitude.

3. Attitude competency follow skill and knowledge competency in having significant effect in having least weight on project success. Among the points responded by respondents' personal character is major factor when working on a project to have success. If project manager satisfies on his/her job, they will reflect result in committing themselves on their job. Also, they involve themselves on others job for their help and to develop others because they know their job well.

Regarding the project success, among the three variables project managers of the company majorly focus on the quality of the deliverable. The output of the project needs to be with standard as per the requirement and PMs' gives focus on this because there are different authorities who will check for this as a measure for an international company. In the meantime, due to the cost saving strategy, they highly engaged on cost saving activity and cost variable is ranked next to quality. In each section coast saving is one of the performance measurements of everyone project managers. So, every PM in the company will minimize cost from every project activity. Finally, they put project timeline as a third ranked than the other variable. Therefore, project success was evaluated as average of the above three variables and somehow the result shows moderately agree on the overall project success. This means there are some failures or deviations on time, cost or quality of the deliverable.

5.2. Conclusion

Based on the results of the analysis and discussion of research results, the researcher conclude as follows: From result of research indicate that variable of Skill, Knowledge and Attitude simultaneously influential positively significant to performance of project manager in FE construction projects success. The most dominant factor influencing the performance of project managers is Skill competency, followed by knowledge and attitude. Result also shows that the importance of Project Success is high, quality is most important followed by cost and time.

According to the results of multiple regression calculation determination coefficient R2 (R Square) shows that all independent variables together influential. While the correlation coefficient shows strong relationship between the independent variable with the dependent variable. Simultaneously and partially knowledge, skill and attitude have an effect of project manager's performance on project success in FE construction projects. From the above, results show that all the project

managers' competencies have a positive effect on project success in FE construction company Therefore, all the variables of project managers' competencies have a direct significant effect on project success.

5.3. Recommendations

The basic purpose of evaluating the effect of project managers' competence should be to accomplish the project success. If project managers' have well developed competency, it has strange impact to achieve the project goal and for project success. Therefore, based on the result and findings of the study, the following recommendations have been drawn:

As presented earlier, the relationship between the Project managers' competencies and the project success was found to be positive, emphasizing the importance of the competencies studied to the success of projects.

- When FE Construction Company recruiting a new project manager, the organization should put standard skill and attitude competency measurement on the criteria for selecting candidates.
- Since project manager competency development is an ongoing process throughout the project life cycle, FE Construction Company should have to regularly assess their competency level using a qualified competency measurement based on the standard.
- Professional development programs can also improve behavioral competencies, like leadership, motivation, self-control, and openness, negotiation, and results orientation changed after a program designed to develop these competencies.
- FE Construction Company should also put a training agenda for both new and senior project managers that include developing the skills competency dimensions (Self-awareness, emotional resilience, interpersonal sensitivity, influence, motivation, and conscientiousness).
- Project managers should also pick their team members carefully and coach them properly, to make sure that those members are able to solve their problems independently and can be counted on.
- Project managers should give their subordinates the power to be innovative and to come up with new solutions to solve problems.

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APPENDIX I

ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF PROJECT MANAGEMENT

QUESTIONNAIRE

Dear respondent,

You are kindly requested to participate on a research study for partial fulfillment of master's degree in Project Management. The study aims to the effect of project managers' competency in construction projects success; in the case of FE construction plc. This questionnaire is prepared to gather project managers' perception regarding this relationship and your genuine response is of invaluable importance for the research success.

Therefore, I kindly urge you to respond to all the below listed questions after close reading of the instructions provided. Please keep in mind that all your answers are going to be used only for this study purpose and will be kept strictly confidential.
Please don't write your name or any personal identifier on the questionnaire.
For any clarification needed please contact me on:

Tsion Tadesse
+251-911-81-16-74
tsitatade@gmail.com

Thank you in advance, for your time.

Part I: Respondent's demographic data

Instruction: Please put a tick mark (√) in the check box corresponding to the choice that most represents you.

1. Gender: Male ☐ Female ☐

2. Age group: 18-25 ☐ 26-30 ☐ 31-35 ☐

36-40 ☐ 41-45 ☐ above 46 ☐

3. The highest level of education you have completed

Diploma ☐ BSC/BA ☐ MSC/MA ☐ PhD ☐

Other: Please specify_____

4. Over all Working experience (year)

≤ 5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ >20 ☐

5. How long have you been employed in FE construction plc. ? (year)

≤5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ >20 ☐

6. What is your position in the organization?

Managing director ☐ Coordinator ☐ Supervisor ☐

Project manager ☐ Office engineer ☐ Site engineer ☐

If other please specify.....

7. Highest size of the project on which you have worked with (based on the project's budget and currency=USD)

Small (<50,000$) ☐ Intermediate (50, OOO$ - 150,000$) ☐

Large (150,000$- 300,000$) ☐ Very Large (>300,000$) ☐

Part II: project manager competences

Instruction: Please carefully read the below listed sentences and put a tick mark (√) in the box which you believe describes to which the following statements are reflective of your project management practices based on the below scale.

***Scale: 1-Strongly disagree, 2- Disagree, 3- Neutral, 4 – Agree, 5- Strongly Agree**

1	**Knowledge competency**	**1**	**2**	**3**	**4**	**5**
1.1	The project manager investigates facts					
1.2	Makes judgments based on reasonable assumptions, and is aware of the impact of such assumptions					
1.3	The project manager sets objectives based on the overall strategic plan					
1.4	Identifies the positives and negatives of ideas					
1.5	Identifies opportunities and threats, and is sensitive to stakeholder's needs					
1.6	Has sound priorities for future work while being able to expect the impact of external and internal changes on the vision					
1.7	Has a clear vision and imagination for the future direction of the organization					

2	**Skill competency**	**1**	**2**	**3**	**4**	**5**
2.1	The project manager communicates with their teams frequently.					
2.2	The project manager encourages creative ideas.					
2.3	The project manager provides direction to inspire others.					
2.4	The project manager uses creative thinking process to solve problems.					
2.5	The project manager tracks his/her weaknesses and strengths					

2.6	The project manager preforms consistently in a range of situations under pressure and adapts behavior appropriately.					
2.7	The project manager shows personal commitment to pursuing an ethical solution to a difficult business issue or problem.					

3	**Attitude competency**	**1**	**2**	**3**	**4**	**5**
3.1	Enthusiastic in Job involvement on identifying with one's job and know team members' strengths and weaknesses					
3.2	Showing organizational Commitment in Sense of pride and obligation for project success					
3.3	Showing Job satisfaction by developing and growing to utilize the expertise and get personal gains					
3.4	PM know his role and carried out as part of the description and beyond that are not part of his job specification.					
3.5	Disposition towards people in identify, support and contribute with people responsible at the organization for getting the work done					
3.6	Linking the concept of individual, team and organization with project aspects.					
3.7	Invests time in developing others' competencies, and effort in coaching them					

Part III: Project Success Practice

***Scale: 1-Strongly disagree, 2- Disagree, 3- Neutral, 4 – Agree, 5- Strongly Agree**

no	**Cost**	1	2	3	4	5
1	There were no major with- cost change requests during the project					
2	Project manager's experience helped to eliminate unnecessary resources.					
3	The project was finished on or under budget					
4	The Project decreased the cost of some activities with no effect on quality.					
	Time					
1	The project met most of the scheduled milestones					
2	The project was finished on time					
3	The Project boosts the employees' abilities by helping to save time					
4	The critical tasks and delivery dates were not slipping.					
	Quality					
1	The Project was handed upon the company's overall standards.					
2	The project deliverables always fulfil the customer requirements					
3	The project meets its business objectives					
4	Setting alternative plans has reduced the unexpected risks possibility.					

Part IV: Interview question

1. What techniques does your organization use to develop project manager's human skills?
2. What techniques does your organization use to develop project manager's technical skill?

Thank you for taking the time to complete this questionnaire.

APPENDIX II

Correlation and regression results

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	attitude, skill, knowledge[b]		Enter

a. Dependent Variable: project success

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.986[a]	0.871	0.860	0.447	0.870	89.789	3	28	0.000	1.676

a. Predictors: (Constant), attitude, skill, knowledge

b. Dependent Variable: success

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.745	3	6.915	89.789	.000[b]
	Residual	4.605	28	0.022		
	Total	21.350	31			

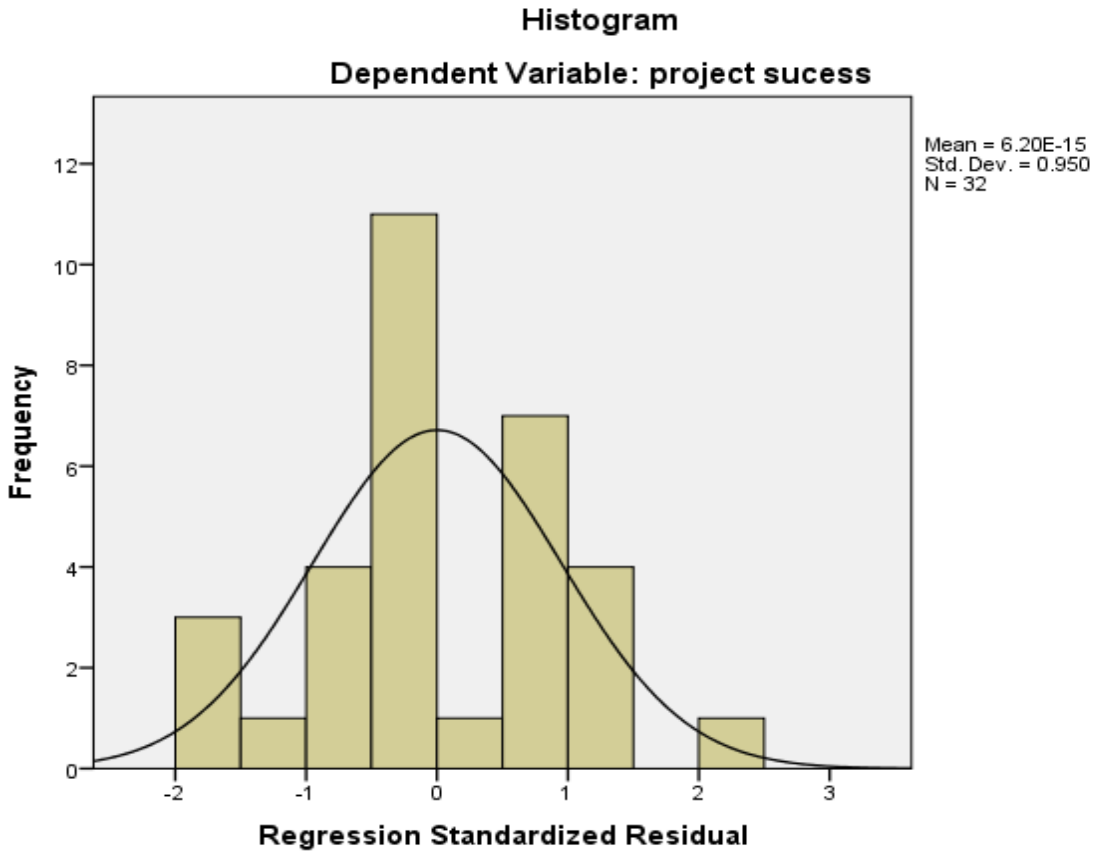
a. Dependent Variable: project success

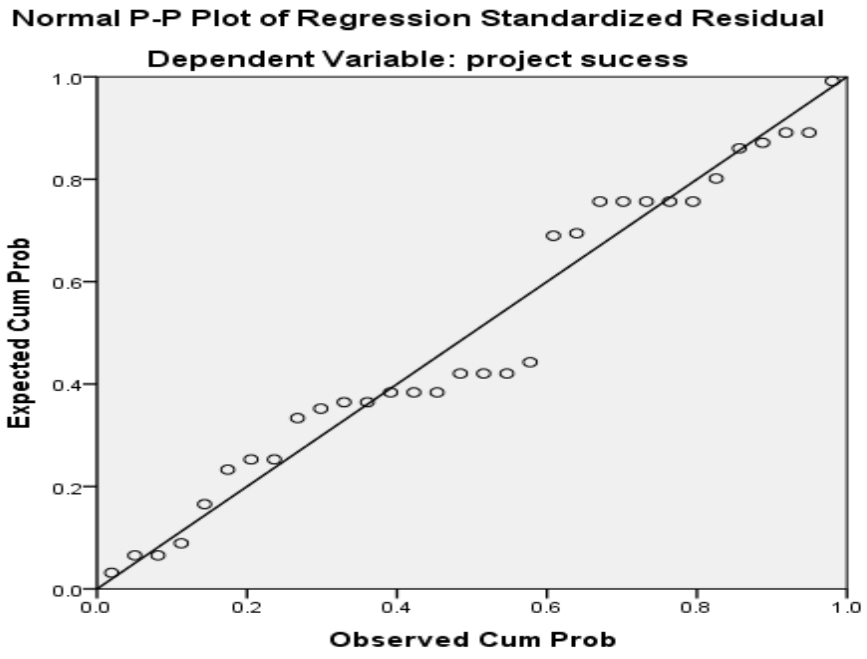
b. Predictors: (Constant), attitude, skill, knowledge

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	0.194	0.278		0.596	0.508	-0.364	0.624		
	knowledge	0.320	0.088	0.380	3.938	0.000	0.174	0.461	0.576	1.745
	skill	0.340	0.075	0.416	4.567	0.000	0.124	0.495	0.567	1.876
	attitude	0.293	0.792	0.367	3.845	0.000	0.194	0.445	0.676	1.511

a. Dependent Variable: project success


Histogram
Dependent Variable: project sucess
Mean = 6.20E-15
Std. Dev. = 0.950
N = 32
Frequency
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: project sucess
Expected Cum Prob
Observed Cum Prob