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ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE
GRADUATE PROGRAM
MA IN PROJECT MANAGEMENT

The Effect of Project Managers' Competence on Project Success:
The Case of Ethiopian Airlines Group

By: Samuel Nigatu

A Research Project Submitted to Addis Ababa University School of
Commerce in Partial Fulfillment of the Requirement for Master of Arts in
Project Management (MAPM)

Advisor: Solomon M. (PhD)

July, 2019

Addis Ababa, Ethiopia

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Statement of Declaration

I, Samuel Nigatu, declare that this thesis entitled “*The Effect of Project Managers’ Competence on Project Success: The Case of Ethiopian Airlines Group*” is carried by myself with the close guidance and support of my advisor Dr. Solomon Markos. I have followed all ethical standards while conducting the research and have duly and properly acknowledged all references and sources. The study is original and has not been used as a requirement for partial fulfillment for any sort of educational qualification at this university or any other.

Samuel Nigatu

Signature

Date

Statement of Certification

This is to certify that this research project by *Samuel Nigatu*, entitled “*The Effect of Project Managers’ Competence on Project Success: The Case of Ethiopian Airlines Group*” submitted in partial fulfillment of the requirements for the degree of *Master of Arts in Project Management* complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

Name and signature of Members of the Examining Board

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<u>Dr. Mengistu Bogale</u>	Examiner	_____	_____
<u>Dr. Abdu M.</u>	Examiner	_____	_____

Abstract

This research examined the effect of competency of project managers on project success in Ethiopian Airlines Group. To achieve the objective of the research, the study used a quantitative research method and explanatory research design. Data for the assessment were obtained from 43 selected respondents (project managers) from three different sections through a five point Likert scale-based questionnaire. 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/impact on project success, skill has the highest impact followed by knowledge and finally attitude having significant impact. There was 82.0 % 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.

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Acronyms

ET:	Ethiopian Airlines
IPMA:	International Project Management Association
IT:	Information Technology
KPI:	Key Performance Indicator
MRO:	Maintenance Repair and Overhaul
PM:	Project Manager/Management
PMBOK:	Project Management Body of knowledge
PMI:	Project Management Institutions
PMCD:	Project Management Competency Development
PMO:	Project Management Office
PRINCE2:	Project In a Controlled Environment
SME:	Subject Matter Expert
VP:	Vice President

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.

Project management is playing an important role in changing business landscapes. The purpose of project management is to bring about structure in the execution of a project. A project is used to create a unique service, product or result (Snyder, 2014). The project as a whole, has its own objectives, measurable criteria and a defined cost and time. Due to the limited timeframe for a project, the scope and resources available are also limited. The time required to complete a project also becomes important. The more time the project takes to complete, the more complex it becomes, raising the risk of failure (Snyder, 2014). There is a vast increase in the application of project management in organizations from 2002 to 2011 (Fortune et al. 2011).

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 (Ireland, 1992).

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.

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 (Rainsbury et al. 2002). Skills are hence considered one of the important attributes of competencies.

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.

According to Andersen et al. (2006) it was approved that for a project to be considered successful, it must be completed within the parameters of its performance goals, within its slated budget and on schedule. The more traditional "hard" technical skills of project managers have drawn much attention, little light has been shed on the "soft" skills, especially social competencies in the construction context (Zhang, 2013).

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). Studies about PMs' competencies have found that there is a significant relationship between Emotional Intelligence and a range of important behavioral skills, such as leadership, teamwork, workgroup effectiveness, and managing conflicts (Sunindijo, Hadikusumo and Ogunlana 2007). 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 and 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 and Rodney 2007).

Business competence refers to the set of business and interpersonal knowledge and skills possessed by professional that enables him or her to understand the business domain, speak the language of business, and interact with their business partners (Zainuddin, Bassellier and Benbasat, 2012).

Competencies often help in project performance, but competencies are seldom used as leading indicators to track the project performance (Fayek and Omar, 2016). Project performance has been usually evaluated using numerous metrics like cost performance, quality performance and schedule performance (Yun et al. 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; skill, 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

With the vision of becoming a World Class Airline by 2025 and for the effective management of projects, the company has studied and implemented a strategy to have project management offices in different sections at VP (vice president) level. As per the anecdotal information (way of doing things) in the company, a person who will be project manager is selected from functional areas in the organization with functional expertise (a subject matter expert – SME) with little or no consideration to the project management competency dimension. However, there is no question that consideration of competency of a project manager from different perspectives will play a huge role to the successful execution of projects.

A project manager's technical competencies are highly regarded; there is a need to go beyond these competencies, developing 'well rounded' project managers that will also fulfil the personal and contextual competencies (e.g. management competency, the soft skills). Failure to recognize these competencies will only hamper an individual's development and ultimately have a damaging effect on organizational competitiveness (Cian, 2014).

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 (Omidvar, Jaryani and Abdul 2011). 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 and Rabechini 2013). The efficient leadership and project management abilities help in developing the ability of the workforce to manage the diverse situations effectively (EL-Annan 2015).

In alignment with the business growth, there is a huge increase in the number of projects in Ethiopian. Together with this, much study that examines the role and influence of project manager competencies on project success is needed in order to identify success rates for optimal return on investment. Project management offices reported there are around 45 active projects currently handled by the company to realize the organization's strategic plan - Vision 2025. Project managers are required to manage both internal and vendor related projects. However, sometimes there are noticeable gaps in successfully executing project management activities, which can be attributed to gaps in competency.

Most of vendor related projects engage project managers from both sides. In these scenarios also, it is easy to observe competency gap between the respective project managers. From the project management point of view, these issues/gaps will have implications for the success of projects.

According to the project manager competency development framework revised edition published by PMI (2002), project success requires project manager competence. It is believed that the results of the study will benefit the organization in aligning project management capacity building with all other business strategic goals.

Provision of the organizational support for project success must be examined for comprehensiveness; i.e. in terms of equipping project managers both with technical and management skills required for a holistic approach for project success. Also, it is necessary to measure competency of project managers scientifically instead of using traditional ways.

Thus, the aim of this study is to assess the effect of project manager competency on project success based on the selected competency variables.

1.3. Research Question

To address the issues mentioned under the statement of the problem, this study addressed the following research questions. How PM's:

- Knowledge competency affect the project success?
- Skill competency affect the project success?
- Attitude competency affect the project success?

1.4. Research Objective

1.4.1. General Objective

The main objective of this study is to assess the effect of project manager's competency on project success of Ethiopian Airlines Group.

1.4.2. Specific Objective

In order to achieve the general objective of the study in detail, the research has addressed the below 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.

1.5. Significance of the Study

The importance of this research is to enhance the existing body of knowledge on the Ethiopian Airlines Project Management offices and the competencies of its project managers by providing insight into whether relationships exist between the project manager competencies and the success or failure of projects since there were no researches found investigating this topic.

After assessing and examining the actual competencies of project managers in Ethiopian Airlines, gaps are identified and this will help the organization to develop project managers' competence and possible recommendation given for solutions to develop project managers at their best and to reach at desirable organizational project management maturity. Also, it will motivate the company to develop its own project managers' competence development framework.

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 and organizations which in turn helps to achieve the value for money and increase project success.

Another important significance of the study is that; the result can be used as an input for other researchers for further study with additional variables to come up with a better output.

1.6. Scope of the Study

1.6.1. Geographic Scope

Ethiopian airlines operate all over the world and have a total of 146 offices outside Addis Ababa including both Regional and international offices. This research used respondents from the headquarters where most of project will be done. And due to the nature of the project, almost all the project managers work in the Head Quarter both for administrative and strategic decision.

Further, this study focused only on three major divisions which will represent the core sections with more projects in the company. As described above, the three selected divisions are IT, MRO (Maintenance Repair and Overhaul) and Facility planning.

1.6.2. Conceptual Scope

Since competency is a wide term, most people define and see from different perspectives. Cartwright and 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. In this study competency evaluated in terms of Knowledge, Skill and Attitude for the overall project success.

As stated in the introduction, Andersen et al. (2006) was 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

The limitations of the research could be that the input data for the analysis is restricted only to IT, MRO and Facility Planning sections of Ethiopian Airlines. The result would have been more holistic if it could also include other sections and other firms in different geographical locations. In addition, this research could be only considered Knowledge, skill and attitude competencies of project managers. Including more variables will help to know the effect better. Also, the limited accessibility of recent literatures that are published in supporting this research is limited which ultimately affects the researchers' understanding of the area.

1.8. 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.

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.

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.

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.

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.

Experience 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.

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

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

1.9. Organization of the study

This project report is organized into five chapters. Chapter one, the present chapter, is a general the introductory part of the study that contain background of the study, statement of the problem, research questions, research objectives, significance of the study, limitation and scope of the study and Organization 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 competency elements and project success discussed in sufficient details using related literatures from international and local sources are reviewed and presented. 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 along with future research directions based on observations and results from the study.

Chapter Two: Review of Related Literature

2.1. Overview

In this chapter the theoretical background of Project Managers' competency and Project Success is discussed based on the availability of previous scientific researches. In addition, Project Managers' competency and Project Success related literatures are reviewed to analyze existing research and to clearly show the research gap to justify the significance of this study.

With the aim of searching for literature to understand the theoretical background of Project Managers' competency and Project Success, the researcher attempted to retrieve various articles. The search parameters and synonyms that were used to logically guide the search engines are Project, Project Management, Project Managers competency, Knowledge Competency, Skill Competency, Attitude Competency, Project Success and Iron Triangle. The articles were searched in Google, Google Scholar, Emerald Insight and IEEE using keywords mentioned above.

2.2. Project and Project Management

In doing business on a day to day operations, projects can be effective in implementing corporate strategy. Projects serve as catalysts for new strategy development, in doing so they drive competitive advantage and business success (Koh and Crawford, 2013). But projects themselves may not be the final goal, they are instrumental in moving organizations toward their goals. As per the study by Serra and Kunc (2015) they agreed and indicated that projects are essential in converting corporate vision into reality.

PMI (1996) defined project as a temporary endeavor undertaken to create a unique product or service. Project managers should be able to perform performance competency activities during the project's life cycle. i.e. Initiating a project, planning a project, executing a project, monitoring and controlling a project and closing a project (PMBok Guide).

Among the phase of projects, project initiation is the one which will be done as a first task. Once a project is initiated, it moves through the lifecycle of the project progressing at a pace established by the project manager operating within the constraints of available resources and environmental factors towards the objectives established for the project. Project manager selection procedure is critical success factor for projects (Parker and Skitmore, 2005). Therefore, the process of selecting

a project manager is integral to successful completion of all other project processes from planning through closure. The reality is that only a small percentage of project managers, or those technical specialists available to assume the project management role are capable of handling the larger more complex projects that are critical to the enterprise (Hauschildt, Keim, and Medcof, 2000).

As per the definition on PMBOK (2006), Project Management as the application of skills, tools and techniques to project activities in order to meet or exceed stakeholder expectations from a project. With the use of the right tools and techniques, it will be able to achieve the requirements of the project, and this is where the competency concept emerges.

Thus, organizations are wise to put those star project managers with strongest set of project manager competences on most strategic projects. However, most individuals inherently have some levels of project management competency and that competency is increased through training and experience over time (PMI, 2007). Therefore, it is necessary for the organizations to understand the level of their staff's skills and match them to projects that they can handle. This will develop project management competencies by learning through experience as a continuous skill. Depending on the project scenario and interpersonal dynamics of the project team, often the manner and personality of the person being assigned as a project manager is more important than their specific project management skills (Muller and Turner, 2009).

As per Cooke-Davies (2002), for the larger more complex projects a key skill required for the project manager is the ability to anticipate, recognize, assess, and address risk areas that arise throughout the project cycle, particularly those inherited from the initiation phase.

Aiming at projects of any significance, the project manager is not doing the work of the project but rather coordinating others in performing the tasks that will produce the short-term deliverables and ultimate project outcome. The most effective way for the project manager to oversee many diverse activities is not to focus on the activity but to focus on risks that will affect that activity. By identifying risk areas early, measures can be taken to avoid, prepare for, or otherwise mitigate the potential damage of the risk event (PMI, 2004). The effective project manager will focus on the cost, quality, and time triangle as their primary metric for self-assessment throughout the duration of a project. By constantly looking for risk potential in terms of these three factors, the project manager will optimize their performance that should lead to project outcome success.

2.3. Project Managers competency

R Ireland (1992) described that project manager is the 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 the person blamed when various dissatisfaction arises amongst team members and customers, irrespective of industry.

PMI (2004) defined a project manager as the person responsible for accomplishing the project objectives and managing a project which includes: Identifying requirements, establishing clear and achievable objectives, Balancing the competing demands for quality, scope, time and cost and finally Adapting the specifications, plans, and approach to the different concerns and expectations of the various stakeholders.

However, they need to rely on others to get the scope of work complete, and if it is a large complex project, they rely on others to complete parts of the project management activity as well. The project manager is considered responsible for project completion, but final decision-making is in the hands of the project executives and sponsors. Furthermore, the project manager has to direct and control the performing organization, which in a more functional based organization or with external performers can affect the ability of the project manager to drive task completion (Feeny and Willcocks, 1998).

Alexander and 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.

Depending on the type of projects and type of organization, project managers will be either full time or functional managers. If project managers are full-time in their role, they are likely well vested in the discipline of project management. However, not all individuals who are called upon to manage projects are full-time professional project managers. Functional managers or technical experts are often placed in the role with varying degrees of effectiveness depending on the project scope, environment, and resource availability (Turner, Muller, and Dulewicz, 2009). More important than the individual's technical, functional management, or project management job

description, are the competencies they are able to bring to bear on the task of leading a project to completion.

Competencies is defined as the ability to mobilize, integrate and transfer knowledge, skills and resources to reach or surpass the configured performance in work assignments, adding economic and social value to the organization and the individual (Takey and Carvalho, 2015). Also, Bredillet et al. (2015) extensively evaluated the competency dimensions and assert that there are three key dimensions: skills, knowledge and core personality characteristics.

Competencies have a wide range of uses that includes training and development, selection of candidates, performance management, motivation and rewarding (Mulder, 2001). The performance and the job roles are clearly defined based on the competency of an individual, so that the human resource can function more efficiently (Wesselink et al., 2005). Project management competency continuously emerges as a key factor influencing project success (Joseph, Erasmus and Marnewick 2014).

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).

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, 2005)

Muller and Turner (2010) 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.

2.3.1. Components of Project Manager's Competencies

A. 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 and 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. PMBOK 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 (Nonaka and Takeuchi 1995; Nonaka and Toyama 2015; Pant and Baroudi 2008). This knowledge is extremely difficult to communicate and share as it is imbedded in a person's experience, revolving around beliefs, perceptions and values.

Alternatively, there is knowledge pertaining to the organization, industry and project type, such as engineering, information systems and finance (Bredillet *et al.* 2013). Industry, organizational and project type knowledge is both explicit and tacit as both knowledge types inform the various phases and processes during a project (Holzmann 2013). 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.

B. Skill Competency

As per the study by Petter and Randolph (2009), 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 (Keil, Lee and Deng 2013). They are practical, and often relate to mechanical, information technology, mathematical, or scientific tasks.

Also, 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 (Stevenson and Starkweather 2010). Leybourne (2007) 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 (Stevenson and Starkweather 2010).

soft skills primarily focus on communication and people management, which is comparable to the research of (Fisher 2011). These skills are a cluster of productive personality traits that characterize one's relationships in a milieu. Also, it can include social graces, communication abilities, language skills, personal habits, cognitive or emotional empathy, time management, 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.

C. Attitude Competency

Boyatzis (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 believed (Bakhsheshi and Nejad 2011). 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.

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 fulfil their responsibilities. Cohen, Ornoy and Keren (2013) expanded their 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.

As per the study by Bakhsheshi and Nejad (2011) 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.

2.4. 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. PMBOK (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). Wateridge (1998) adds that unless the project team agrees on the success criteria before the project starts, the individuals involved will travel in different directions and some will see the project as a failure.

Projects will use as a means to achieve business objectives that has increased over the past decades (Papke-Shields et al., 2010; Todorovic et al., 2015). Along with increased business practice and growth in membership of project management professional bodies the subject of project management has received large interest from scholars (Cooke-Davies, 2002). However, despite column-miles of studies and publications the academia fails to present a consistent interpretation of the term "project success" (Baccarini, 1999; Thomas and Fernández, 2008). In an extensive review of literature on project success Müller and Jugdev (2012) concludes that no clear definition exists and stresses the need for measurable constructs of project success.

PMI (2004) describes the fundamental success criteria of delivering project scope on time and on budget. Project success is measured against the overall objectives of the project whereas project management success is measured against the traditional measures of performance such as completing project within time, cost, and meeting scope and quality (Cooke-Davies, 2002).

Project success is among the most researched topics in project management because of the importance in understanding how to define success and what factors contribute to achieving it.

Despite this the term project success still remains diffuse and often in the eye of the beholder (Judgev & Müller, 2005). The measures used to judge the success or failure of a project, called success criteria, and are the dependent variables that measure success per Morris and Hough (1987). Defining and agreeing upon project success criteria to make project success measurable is a way to overcome the subjective interpretation of project success (Muller & Turner, 2007).

Among the duty of project manager, determining the success of ongoing project in terms of cost, time and expectation of stakeholders are the major once. As stated by Scott, (2013) the main indicator of success of the project is comprised of on time completion of work, not face cost overrun and finish the work under budget, and most significantly meet the minimum expected quality standard for the desire of customers. As found in several literature works that ultimate success of a project lies in the accomplishment of the proposed reason. One significant part to ensure the success of the project is associated with expressing deliverables of the project. Another view from other relevant researcher has provided the concept that consideration of time and spending of money on the objective of project purpose usually define success. The assurance of project success is associated with administrators of organization that connects all assets, abilities and unpredictable parameters of project (Scott, 2013).

With project management research still in its early stages studies on project success focused on the three aspects of cost, time and quality (Cooke-Davies, 2002), also called the "iron-triangle" (Papke-Shields et al., 2010). These dimensions of performance are still considered highly relevant and frequently used in practice for assessment of project success (Scott-Young and Samson, 2008; Papke Shields et al., 2010).

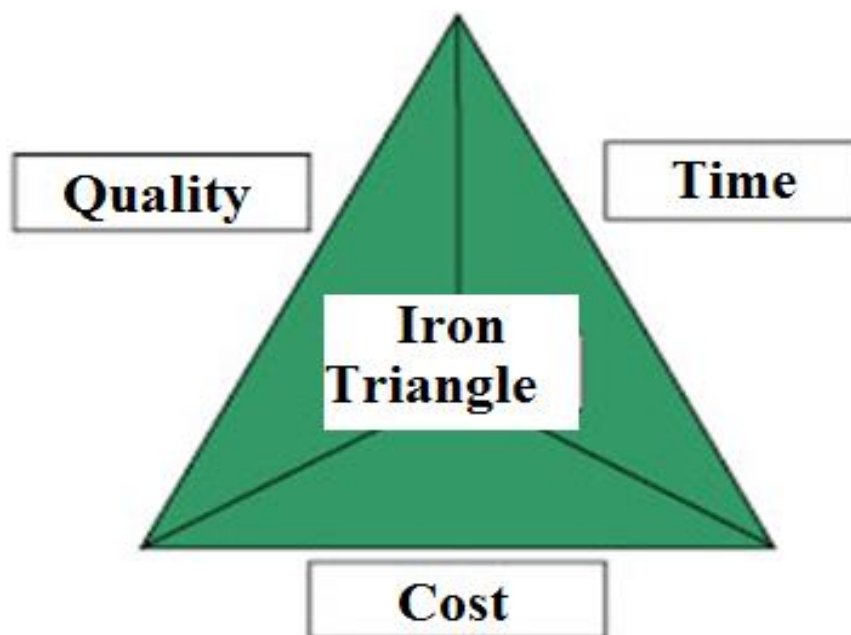
The Iron Triangle was originally conceived as a framework to enable project managers to evaluate and balance the competing demands of Cost, Time and Quality within their projects (Atkinson, 1999). Subsequently it has become the de-facto method to define and measure project success, with the general perception amongst project managers that a successful project is based upon these three criteria alone (Shenhar and Dvir, 2007). Any attempt to deviate from, or supplement the three criteria that make up the Iron Triangle is often considered a problem that must be either corrected or prevented in the first place (Shenhar and Dvir, 2007; Turner and Bredillet, 2009).

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 and 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 and Dvir (2007) questions the validity of the Iron Triangle.

Furthermore, Garrett (2008) quoting Shenhar at a PMI meeting, suggests that the three traditional time, cost, quality factors are strictly efficiency based, whereas the focus should be shifted to more business oriented results and customer satisfaction. This opens for the question whether sustainability can be seen as a new concept to consider in connection with the Iron Triangle as a planning tool since with project management comes changes. Research suggests that current standards for project management fail to seriously address the sustainability issues, or equip project managers with the tools necessary for them to integrate sustainability principles into the project planning, and operation (Silvius and Schipper 2011).

Figure 2.1: 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.

Time

All projects are constrained to a time frame during which they are to be completed. No projects are intended to continue forever. Thus, one of the basic requirements that control project management and determine its success is whether it is completed on established schedule (Pinto, 2013).

Cost

All projects are constrained to a limited budget; no company has unlimited resources to spend on projects. Projects also compete for resources between each other. In order to use resources efficiently projects must adhere to approved budget. Thus, the second requirement that control project management is whether it is completed within budget guidelines or not (Pinto, 2013).

Quality

All projects are produced to meet some form of technical specification determined at project initiation. Thus, measuring success equals determining to what extent the project fulfills the specification (Pinto, 2013).

2.5. 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, and Brown, et. al. (2007) investigated the relationship between human capital and time performance in project management and finally of

the sample historical related studies, there is Dvir, et. al. (2006) studied the relationship between project managers' personality, project types, and project success.

2.6. Previous Studies

Some selected previous studies were researched to strengthen the topic. Therefore, this section focused on relationships among project managers' competencies and their effect on project success both from local and international studies:

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.

Abebe (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.

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.

Cech and Chadt (2015) with study titled: "**Project Manager and his/hers Competencies**" discussed that competencies of a project manager are formed by a set of knowledge, skills, ways of behavior and attitudes and related experience. It is a way by which a project manager asserts his/her own professional knowledge to terminate a project successfully. The methodology was by using a survey that distributed to around 200 project managers. The result showed that high performance competencies enable the project managers to manage their projects efficiently.

Muller and Jugdev (2012) study titled: "**Critical success factors in projects Pinto, Slevin, and Prescott - the elucidation of project success**", aimed to discuss the reasons for the impact of these seminal contributions and how the topic of project success continues to evolve. This paper analyzes the popularity of Pinto and his colleagues' contributions to project success and reviews the development of this field of research since then. The findings stated that project success remains a vibrant school of thought as do the earlier definitions, measurement scales and dimensions, and assessment techniques that Pinto and his colleagues developed. The authors view success more broadly and think of it strategically because they consider longer-term business objectives.

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.

Wiangnak and Lekcharoen (2014) a study titled: "**The Causal Relationship Model of Project Managers' Competencies Influences: Efficiency of ICT Project Management**". The objective was to develop and validate a causal relationship between project managers' competencies and efficiency of project management. They found that many papers have discussed the competency of project managers, but they could not find any studies said about the causal relationship model between project managers' competencies and efficiency of project management in Thailand. The

model consisted of four latent variables: knowledge areas, technical and managerial skill, personal attributes, and efficiency of project management. The survey sample consisted of 218 project managers in companies under the ICT (Thailand) industry. Thus, the result 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.

Langer, et. al. (2008) In a study titled “**Project managers' skills and project success in IT outsourcing**” had discussed what skills do project managers (PMs) need, and how do these skills impact project success in IT outsourcing? with that was prepared to identify what factors impact IT project outcomes, such as costs and client satisfaction, given the project characteristics and PM's hard and soft skills. They examined data collected from a field study conducted at a major IT service provider in India. Their results suggest that while hard skills such as technical or domain expertise may be essential in a PM, soft skills, such as tacit knowledge of organizational culture and clients, are more important for project success.

Chipulu, et. al. (2013) study titled: “**A Multidimensional Analysis of Project Manager Competencies**”, aimed at exploring the key competencies employers require from Project Managers across multiple industry sectors. The researcher code the contents of 2306 online project management job advertisements in the U.K., the U.S., Canada, China, India, Hong Kong, Malaysia, and Singapore for frequently occurring keywords. Using three-way multidimensional scaling (MDS). The researcher extract six dimensions of competence i.e. industry specific and generic skills over project management expertise, project management knowledge over industry specific and generic skills, managerial skills, personal traits, project management methodology experience and professional qualifications and finally risk management over a project life cycle.

Briere, et. al. (2015) study titled: “**Competencies of project managers in international NGOs: Perceptions of practitioners**”, aimed at identifying competencies of international development project managers and how these competencies are used in projects. In this study, 28 project managers were interviewed. The study results identified 11 competencies, of which ten are related to human aspects; adaptability, set of knowledge (general, international development, intercultural), communication, personal qualities, interpersonal skills, leadership, ethics, local

network and knowledge, capacity building, and change management. The study also pointed the importance of human skills and behavioral competencies in project management.

From the literatures reviewed above, it can be concluded that project managers play crucial role in the project success and based on this if the project manager didn't have necessary competencies the project will most likely fail.

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. But, still there are different competencies weren't joined together to study their effect on the project success. Therefore, this study will explore and increase awareness on the effect of the project managers' competencies (Knowledge, skill and attitude) on project success on three selected project management offices on Ethiopian Airlines.

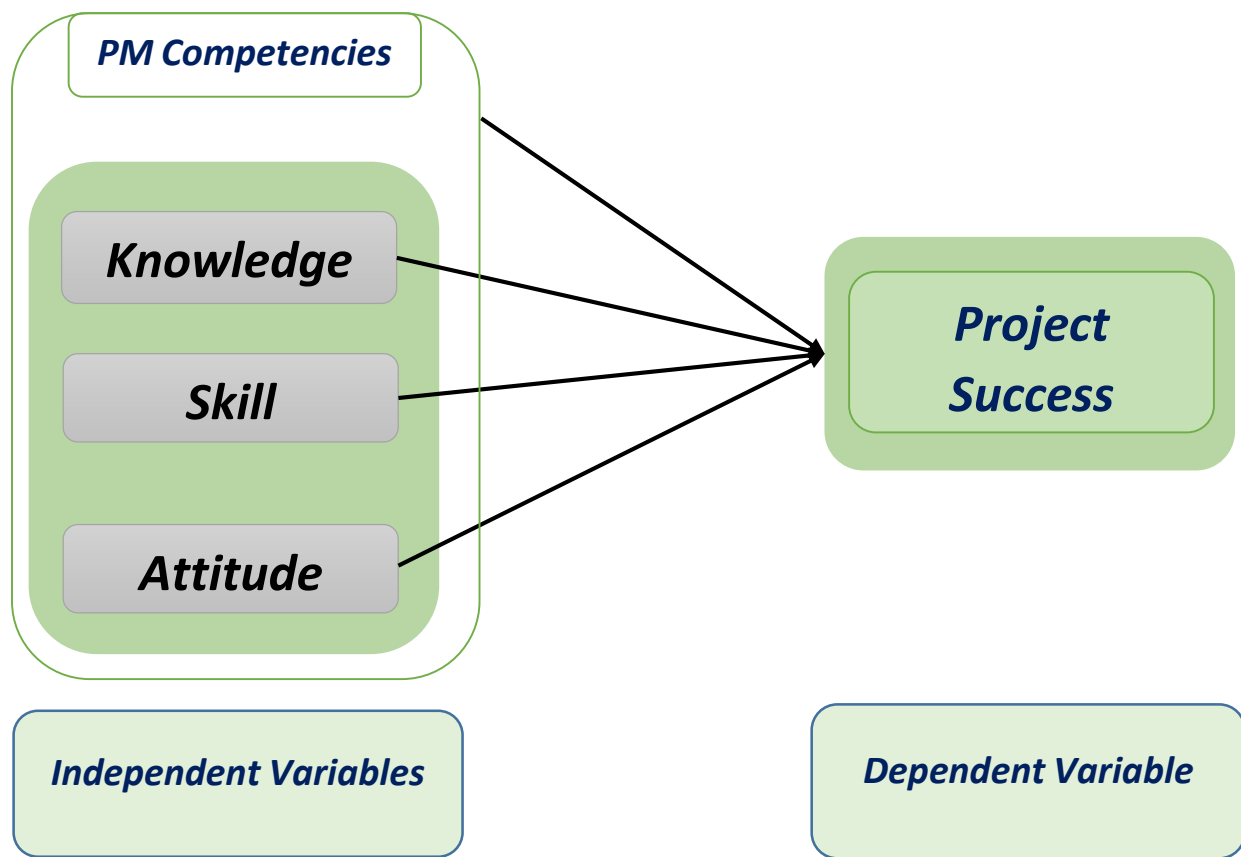
2.7. Conceptual Framework of the study

The study is designed to research the effect of Project Manager's competencies on project success. The model was adapted from Araujo and Pedron (2015) on their study "The IT project manager competencies that impact project success—A qualitative research". 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); Crawford 2005; Müller and Turner (2009)).

Depending on IPMA Competence Baseline, it divides project manager competencies into three groups: technical, behavioral and contextual (Capin et al. 2006). The technical competencies refer to competencies related to project management itself, for example, project planning, time management, etc. Behavioral competencies are to do with the personal abilities and skills of the project manager such as leadership, creativity and commitment. The contextual competencies range involves the competencies related strictly to the context of a specific project, such as development and programming skills, business knowledge, knowledge of legal issues, and others (Capin et al. 2006).

Therefore, this study considered Attitude, knowledge and skill as an independent variable where personal characteristics is included as a part of attitude. In addition, project success is considered as a dependent variable (based on the aspects of iron triangle).

Figure 2.2 Conceptual framework of the study



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

Chapter Three: Research Methodology

3.1. Description of the Study Area

The study was conducted at Ethiopian airlines project management offices under three different divisions IT, MRO and Facility Maintenance. Under IT Division there are Application Development and Digital sections which will manage all IT projects. In MRO, the Engineering section is responsible for technical projects related to aircrafts and for expansion activities the facility planning section will do different expansions in the company including the airport and expansion projects. There are a total 46 project managers under these three sections as listed below:

- IT: 29
- MRO: 8
- Facility Planning: 9

3.2. Research Approach

In this research, Ethiopian Airlines is considered as a case company to study The effect of Project managers' competence on Project success. The data was collected using questionnaire adopted from Suhaib, (2017) on his study "The Impact of Project Managers' Competencies on Project's success" and Hilson and Muray (2002) on their study "Developing Competency model for the Project Manager in the Libyan Construction Industry". The objectives of the study and the availability of relevant information of this study used quantitative research. 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.

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 ET 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 will apply Quantitative research method.

3.3. Research Design

Cooper and 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 study 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 Ethiopian Airlines.

3.4. Target Population

Target population refers to the entire group of individuals or objects from which the study seeks to generalize its findings (Cooper and Schindler, 2014). Under IT section the study focused on Application Development and Digital Sections. In considering MRO, the study considered Engineering Section and for other expansion activities, Facility Planning Section do different expansions in the company. For this study all 46 project managers under the listed sections were considered as a target population and the study used census as the number of populations is small. This technique was done in order to identify and select information with rich samples and to maximize efficiency and validity of the study.

3.5. Data Sources and Types

The study used, primary data to obtain relevant data and information. In order to realize the target, the study used questionnaire survey as best instrument to gather primary data from the selected population. In addition, some reports related to project management, project management working manual of the company and other relevant documents like journals and published and unpublished materials that will help and strengthen the title.

3.6. Data Collection Procedures

Questionnaires was used as a primarily data collection instrument. Owen (2002) 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, this instrument will be selected as a quick and cost-effective way to collect data.

Accordingly, the questionnaire was hand delivered to 46 respondents physically by the researcher. Subsequently, follow-ups conducted through phone & short message service such as Skype for business. Moreover, the researcher also approached the respondents physically to encourage them to finalize the questionnaires timely with their genuine feedbacks.

3.7. 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 disclosed, 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, maintain data confidentiality, 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.

3.8. Data Analysis

The data was collected and analyzed using quantitative data analysis methods. The data analysis for the questionnaire was done using SPSS (Statistical Package for Social Science). After giving numerical code for each response paper. SPSS is selected for the reason that it is readily available and user-friendly analysis tool with which the researcher is familiar with. Descriptive statistics such as percentage, frequency and measures of central tendency (mean and standard deviation) were used to summarize the responses. The collected data from the study presented with

Descriptive method, in tabulated form to make all the data readable and understandable by all concerned parties.

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.

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.

3.9. Validity and Reliability

3.9.1. Validity

The study was done on the only international airline in Ethiopia apart from small scaled regional based airlines; 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. Also, 5 subject matter experts were chosen and constructive comments were collected from them. Accordingly, 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.

3.9.2. Reliability

This study used survey questionnaires which are already tested and applied on an international research level. But due to some modification on the adapted instrument to check it is understood by the respondents or not, 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 and incorporated in the instrument to be checked by using Cronbach's alpha coefficient on SPSS Version 23.0.

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 and Bougie, 2009). If Cronbach's alpha value is more than 70% for all variables, then reliability is assumed. Table (3.1) shows that Cronbach's Alpha coefficients for all variables are more than 70%, therefore reliability is assumed. (Tavakol and Dennick, 2011).

Table 3.1: Cronbach's Alpha coefficient

No	Variables	Number of Items	Cronbach's Alpha
1	Knowledge	7	.889
2	Attitude	7	.856
3	Skill	7	.822
4	Competencies	3	.935
5	Project Success	12	.890
6	All Measurement items	33	.908

Source: Pilot test Own Survey, 2019

As indicated in table (3.1), the Cronbach's Alpha test reveals that the instrument's internal consistency as 90.8 % which is well above the acceptable value (i.e. 70%). Therefore, the research instrument is reliable, and the forthcoming findings & conclusions are acceptable and concrete.

Chapter Four: Data Presentation, Analysis & Interpretation

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, graphs and charts to facilitate easy understanding.

Of the 46 questionnaires distributed, 45 filled questionnaires were collected. Of which, one overrated response (5 on all measure) and one underrated response paper (rating of 1 & 2 for all measure) were identified. Therefore, these responses have excluded and lowered the number of filled questionnaires to 43 which gives a response rate of 93.5%. 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 adopted 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 version 23. Since the data collection was administered by the researcher, the usability of the questionnaires was checked upon collection and respondents were asked to refill for any missing values.

4.1. Demographic characteristics of respondents

Below is a presentation of the gender, age, educational level, work experience and maximum size of the project lead distribution of the survey questionnaire respondents.

4.1.1. Gender & Age distribution of respondents

As can be seen from the Table 4.1, majority of the respondents are male (n=28, %=65.1%) and 34.9%(n=15) are female. This shows that when compared to male there is low number of females on project manager position in the organization. In addition, majority of the male respondents (n=16) fall in the age group of 26–30 years' old which is also true for the female respondents (n=7). Generally, 88.4% of the respondents are below the age 35 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 4.1: Gender of respondents by Age Group

Gender	Age Group				Total
	18-25	26-30	31-35	Above 40	
Male	1	16	7	4	28
Female	3	7	4	1	15
Total	4	23	11	5	43

Source: Own Survey, 2019

4.1.2. Educational Qualification of respondents

The below table (Table 4.2) shows that 29 respondents (67.4%) have a Bachelor's degree and 14 respondents (32.6%) 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.

Table 4.2: Educational Level

Educational Level	Frequency	Percentage
Bachelor's degree	29	67.4
Master's degree	14	32.6
Total	43	100.0

Source: Own Survey, 2019

4.1.3. Highest Size of the project worked

The questionnaire of this research requested about the highest approximate size of the project on which the evaluation is to be based, in terms of its relative cost and complexity. Since evaluating

projects on either their budgets or complexity only can be considered unfair as some projects might have a huge budget but a low complexity, and vice versa. It was found that most of the responses about the projects they lead evaluated are of the very large constituting a percentage of 41.9% of the total sample, followed by the intermediate and large projects category with both same 20.9%. Finally, the category of small projects covers 16.3% of the data collected as presented in table 4.3 below. This implies that most of the respondents have good educational background to lead different project sizes and provide the ability to view the subject matter under consideration in detailed and elaborated manner.

Table 4.3: Highest Size of the project worked

Size of Project	Frequency	Percentage
Small	7	16.3
Intermediate	9	20.9
Large	9	20.9
Very Large	18	41.9
Total	43	100.0

Source: Own Survey, 2019

4.1.4. Work Experience and Experience as a Project Manager in the Company

The last part of the demographics section asked project managers about their overall experience in the company and as a project manager to understand the level of their experience and how that might influence their practices. The results on the below table (4.4) showed that respondents' experience below 5 years both in the company and as a project manager is 17 (39.5%). Also, between 5 to 9 years in Ethiopian airlines and less than 5 years as a project manager is 15 (34.9%). Respondents with experience in the company less than 10 years cover 83.7% (36) of the total population. Among all, 37 (86%) of project managers have experience less than 5 years as a project manager. The rest classification more than 10 years on both experiences will take smaller portion. This shows most of the project managers in the company worked less than 10 years in the company and classified on the younger age group which will serve the company for a longer period.

Table 4.4: Work Experience and Experience as a Project Manager

Experience as a project manager	Experience in Ethiopian Airlines				Total
	< 5 Years	5-9 years	10–15 years	>15 years	
< 5 Years	17	15	2	3	37
5-9 years	2	2	0	0	4
10–15 years	0	0	0	2	2
Total	19	17	2	5	43

Source: Own Survey, 2019

4.2. Descriptive Analysis of Project Managers’ Competencies

As per the below Table (4.5), it shows that the mean values of the Project Managers’ Competencies variables are ranged between “3.88 to 3.91” with standard deviation ranges between “0.704 to 0.840”. It means that there is a semi agreement among respondent about medium importance of the Project Managers’ Competencies variables. The average mean value of Project Managers’ Competencies variables is 3.88 with standard deviation 0.766, which also mean there is a high importance for Project Managers’ Competencies. For all variables, the maximum response is Strongly Agree and the minimum is Disagree for attitude and Neutral for Knowledge and skill.

The result shows that the level of project managers competencies is moderately high and among the listed competencies Skill competency have high mean value.

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

Table 4.5: Project Managers’ Competencies

Competency Variables	Minimum	Maximum	Mean	Std. Deviation
Knowledge	3	5	3.84	.754
Attitude	2	5	3.88	.840
Skill	3	5	3.82	.704
Competency Average			3.85	.766

Source: Own Survey, 2019

4.2.1. Knowledge

Table (4.6) shows that the respondents perception agreed with the given statements under knowledge competency with the degree of the implementation of Knowledge items mean values are ranging from 3.65 to 4.16 with average value of 3.94 and standard deviation ranging from 0.721 to 0.835 with average value 0.809. Such results indicate that there is an agreement between respondents on high importance of Knowledge items. As per the response the study tries to check knowledge competency in relation to the effect on project success on points like investigating facts, making judgments, setting objective as per the plan, identifying and managing stakeholders, set priority and having future vision will help project success as stated on the literature review. The results showed that, more or less project managers agree on the points listed and use their knowledge to make end result of the project to success.

Table 4.6: Project Manager Knowledge Competency

Items requested	Mean	Std. Deviation
The project manager Investigates facts	4.14	.743
Makes judgments based on reasonable assumptions, and is aware of the impact of such assumptions	4.16	.819
The project manager sets objectives based on the overall strategic plan.	3.95	.835
Identifies the positives and negatives of ideas	3.88	.721
Identifies opportunities and threats, and is sensitive to stakeholder's needs	4.12	.747
Has sound priorities for future work while being able to expect the impact of external and internal changes on the vision	3.65	.981
Has a clear vision and imagination for the future direction of the organization	3.67	.814
	3.94	0.809

Source: Own Survey, 2019

4.2.2. Attitude

Table (4.7) shows that the means of the respondents' perception about the degree of the implementation of Attitude items are ranging from 3.79 to 4.28 with standard deviation that ranges from 0.644 to 0.998 such results indicate that there is agreement on high importance of attitude competency items. The average mean of the total attitude variable items is 3.96 with standard deviation 0.82, which indicates that there is agreement on high importance of this variable. The response also shows that the respondent agreed on attitude competency with major points on job involvement, organizational commitment, job satisfaction and knowing role besides stretching target will have high impact on project success. But, they need support from their immediate supervisors about their job description clearly to be carried out throughout their project life and to stretch and go beyond expectation also they need time in investing on developing others and they have to give support and contribute their part to complete the work and to be effective.

Table 4.7: Project Manager Attitude Competency

Items requested	Mean	Std. Deviation
Excited in Job involvement on identifying with one's job and know team members' strengths and weaknesses	4.28	.691
Showing organizational Commitment in Sense of pride and obligation for project success	3.95	.644
Showing Job satisfaction by developing and growing to utilize the expertise and get personal gains	4.00	.773
PM know his role and carried out as part of the description and beyond that are not part of his job specification.	4.02	.880
Disposition towards people in identify, support and contribute with people responsible at the organization for getting the work done	3.79	.998
Linking the concept of individual, team and organization with project aspects	3.81	.880
Invests time in developing others' competencies, and effort in coaching them	3.88	.868
Average	3.96	0.82

Source: Own Survey, 2019

4.2.3. Skill

As per Table (4.8) for the statements given under Skill competency, the respondent level of agreements was with interval mean value from 3.67 to 4.12 and with average mean 3.97 showing they have an agreement on their response. The standard deviation ranges from 0.768 to 0.936. with an average value of 0.840. On the responses, project managers' have positive feedbacks related to providing direction for inspiring others, tracking weakness and strength in helping others and be consistent on work. But, they responded less on areas of communication, encouraging creative ideas, creative thinking for problem solving and personal commitment. Though, they need to develop their problem solving ability and need to show personal commitment on their work.

Table 4.8: Project Manager Skill Competency

Items requested	Mean	Std. Deviation
The project manager communicates with their teams frequently	3.81	.768
Encourages creative ideas	3.85	.908
Provides direction to inspire others	4.09	.824
Uses creative thinking process to solve problems	3.67	.886
Tracks his weaknesses and strengths	4.12	.774
Performs consistently in a range of situations under pressure and adapts behavior appropriately	3.91	.787
Shows personal commitment to pursuing an ethical solution to a difficult business issue or problem	3.88	.936
Average	3.90	0.840

Source: Own Survey, 2019

To summarize the competency dimensions, on all the competency dimensions' respondents responded moderately agree to the points raised implying project manager competency is necessary and based on the mean comparison of the independent variables shown in table 4.5 above, it can be seen that Attitude is ranked first (3.88) followed by Knowledge (3.84) and finally Skill (3.82) respectively. But still results showed that most of respondents responded below agree on their response. This implies competency area need improvements and still there is a gap.

4.3. Descriptive Analysis of Project Success

According to Table (4.9), the mean value of the Project Success variables is ranging between 3.30 to 4.23 and standard deviation ranging between 0.625 to 1.103. 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 0.9085, 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 4.9: Project Success Variable

Items requested	Mean	Std. Deviation
There were no major with cost change requests during the project	3.30	1.103
Project manager's experience helped to eliminate unnecessary resources	4.23	.649
The project was finished on or under budget	3.63	1.070
The Project decreased the cost of some activities with no effect on quality	3.79	.804
The project met most of the scheduled milestones	3.74	1.026
The project was finished on time	3.30	.989
The Project boosts the employees' abilities by helping to save time	3.93	.856
The critical tasks and delivery dates were not slipping	3.40	1.027
The Project was handed upon the company's overall standards	4.00	.845
The project deliverables always fulfil the customer requirements	3.72	1.008
The project meets its business objectives	4.00	.900
Setting alternative plans has reduced the unexpected risks possibility	4.12	.625
Average	3.76	.9085

Source: Own Survey, 2019

Based on the result, there are some cost changes on the project time, this may be due to vendors give less cost at the bid time and 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. In IT sections when there is an interface needed, development will be done by the internal

team in order not to increase cost. Due-to cost saving strategy of the company and experience of project managers working with different vendors, they will eliminate unnecessary resource wastage; in addition, working with different vendors develop their experience well. As a result, this is the highest score among the requests.

As per the result, there is no major milestone change on projects unless if there is a change on the requirement. Also 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. This means most of the project timelines will be delivered by vendors and if there is change request, the project timeline will also be affected. Generally, from the response mostly project timeline is affected. This will create additional resource requirement.

The company has a vision to get better quality with minimum cost. Here the result also showing respondents agree on the quality standard of the work done as per the specification on the requirement at a minimum level. Most of the time when working with vendors, they are requested for risks they face when doing projects by a means of lessons learnt report and project managers of the company will evaluate that to the requirement, company standard and the overall objective. This will evaluate the quality of the work and respondents' responses are more or less similar and not compromising quality when doing project works.

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, inferential statistics of correlation & regression analysis have been used & the results are presented in the below sections.

4.4.1. Pearson Product-moment 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 & independent variables have a joint variation, 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 under study and when the correlation value is lies in the middle between 1 & -1 (excluding 0) the below interpretation guide (Table 4.10) 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 4.10: 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 4.11: Pearson's Correlation Among All Variables

		Knowledge	Skill	Attitude	PM Competencies	Project Success
Knowledge	Pearson Correlation	1				
	Sig. (2-tailed)					
Skill	Pearson Correlation	.622**	1			
	Sig. (2-tailed)	.000				
Attitude	Pearson Correlation	.562**	.600**	1		
	Sig. (2-tailed)	.000	.000			
PM Competencies	Pearson Correlation	.796**	.741**	.726**	1	
	Sig. (2-tailed)	.000	.000	.000		
Project Success	Pearson Correlation	.775**	.808**	.755**	.924**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

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

Source: Own Survey, 2019

As witnessed on the above table (4.11) which depicts the relationship between project managers' competencies and project success. According to table the correlation between project managers' competencies ranges between values ($r=0.562$, $p<0.01$) and ($r=0.622$, $p<0.01$). Based on table (4.10) interpretation guide there is positive moderate correlation between the independent variables. Likewise, the correlation between project managers' competencies (Knowledge, skill and Attitude) and project success variable values ranging from ($r=0.664$, $p<0.01$) to ($r=0.826$, $p<0.01$). This also shows there is positive high correlation. Also, in checking the correlation between combined project managers' competence variables with project success, Pearson correlation value illustrates that skill ($r=0.821$, $p<0.01$) interpreted as high to very high correlation between them.

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. Tests of Regression Model

Before running multiple linear 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 multicollinearity tests. Each test is explained below and the result is found in Appendix 2.

A. Normality Distribution 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. Curvature at both ends of the plot indicates long or short distribution tails. Convex, or concave, curvature indicates a lack of symmetry. Gaps, plateaus, or segmentation in the plot indicate certain phenomenon that needs closer scrutiny.

As depicted in the below Normal PP plot of regression standardized residual, there exists a linear relationship between project managers' competence and project success. The PP plot is shown in Appendix 2.

B. Linearity of the Relationship Test

The second assumption for computing multiple regressions is test of the linearity of the relationships between dependent and the independent variables. As depicted in the below scatter the visual inspections of the scatter plot shows there exists a linear relationship between project managers' competence and project success. The scatter plot is shown in Appendix 2.

C. Multicollinearity Test

Multicollinearity refers to the situation in which the independent/predictor variables are highly correlated. In order to check if there is multicollinearity 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 multicollinearity. Whereas, VIF is the inverse of tolerance value (1 divided by tolerance). If VIF value is above 10, it signals chance of multicollinearity. Accordingly, the result in Appendix 2 shows that there is no possibility of multicollinearity 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 multicollinearity is not an issue.

4.4.3. Multiple Regression analysis

Regression is a measure of association between two sets of variables. Thus, in order to determine the statistically significance effect of the independent variables on the dependent variable, multiple regression analysis was used. As an extension of simple regression, 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).

On this study the it is 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 R^2 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.

Table 4.12: 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	.913 ^a	.833	.820	.292	.833	64.806	3	39	.000	1.446

a. Predictors: (Constant), Attitude, Knowledge, Skill

b. Dependent Variable: Project Success

Source: Own Survey, 2019

Inferring from table 4.12, adjusted R^2 value of 0.820 then the independent variable can explain 82.0% of variance on dependent variable, success is explained by project managers' knowledge, skill and attitude. Therefore, the null hypothesis is rejected, and the alternative is accepted which states "project manager's competencies affect project success". Further, the F-test shows that the

model is statistically significant at 99% confidence level ($p < 0.01$) which indicates that the variation explained by the variables is not due to chance.

As per the analysis of regression on the above Table 4.12, the adjusted R square was 0.820 the model estimated shows that there was 82.0 % positive variation in project success as a result of changes in the project managers' competence as explained by model. 18 % of the variation in project success was explained by other factors other than project managers' competence. In other way, it is noted that 82.0 % of the changes in the project success variables could be attributed to the combined effect of the predictor variables or there is 82.0 % of variation in project success due to project managers' competence.

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 4.12 above was 1.446 DW test result fall in the non-rejection region.

ANOVA

The regression model overall fit can be examined with the help of ANOVA. Accordingly, table 4.13 of this study shows that the value of R and R² found from the model summary is ($F=64.81$), ($P < 0.001$). This indicates that over all, the regression model statistically significantly predicts the outcome variable that is the supply chain performance.

Table 4.13 ANOVA Model fit

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.542	3	5.514	64.806	.000 ^b
	Residual	3.318	39	.085		
	Total	19.860	42			

a. Dependent Variable: Project Success

b. Predictors: (Constant), Attitude, Knowledge, Skill

Source: Own Survey, 2019

Standard Beta Coefficient

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 4.14 Beta Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.180	.270		.666	.509		
	Knowledge	.315	.080	.345	3.938	.000	.558	1.794
	Skill	.335	.076	.401	4.428	.000	.522	1.915
	Attitude	.294	.079	.320	3.732	.001	.582	1.718

Source: Own Survey, 2019

Standardized beta values 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). Therefore, in this case, Skill takes the higher share in contributing for project success since it has the highest standardized coefficient beta value of $B=0.401$ followed by Knowledge $B=0.345$ and Attitude $B=0.320$, by descending order. 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 or domain expertise may be essential in a PM, soft skills, such as tacit knowledge of organizational culture and clients, are more important for project success.

From the above table (4-14), it can be concluded that all the project managers' competencies have an effect on project success in Ethiopian Airlines. In short, the results indicate that Project Managers' Competencies (Knowledge, Skill and Attitude) influence Project Success. As per the output of the standard Beta coefficient, 40.1 % 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. In line with this, scholars have empirically asserted skills are a cluster of productive

personality traits that characterize one's relationships in a milieu. Also, it can include social graces, communication abilities, language skills, personal habits, cognitive or emotional empathy, time management, teamwork and leadership traits and plays major role in leading projects (Fisher 2011).

According to the finding, the next highest determinant factor of project success is Knowledge. As shown in table 4.14, Knowledge makes a contribution of 34.5 % of the total variance project success.

Finally, Attitude competency made a contribution of 32.0 % 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 going to be 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 of Major Findings

Since the main objective of this research is to assess the effect of project managers' competencies on project successes of Ethiopian Airlines Group. The study targeted a total of 46 respondents. However, only 43 respondents responded and returned their questionnaires contributing to 93.48% response rate. Respondent from different age group, educational background, and year of experience both in the company and as a project manager are represented in the data collected.

The result of background of respondents shows that majority of the total respondents are male with total of 27 (65.1%) while the remaining 15 (34.9%) are female. Regarding the age, most of respondents around 88.4% are below the age 35 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 since managing a project needs change and always there is new ideas and experiences as per the uniqueness property of every project.

Majority of the employee sample group were BA/BSC holders with total number of 29 which represents 67.4% from the total employee participant of this study. Also rest of respondents 32.6% have master's degree. Regarding work experience less than 10 years cover 83.7% (36) of the total population. But in one way or another most of them will appoint to this position if they have a minimum of 3 years of experience in the company. Based on their experience project will be assigned for them since the complexity will increase for larger projects.

As per the results of this study, there is a significant implementation of project managers' competence elements in Ethiopian Airlines Group. All variables of project managers' competencies have a direct significant effect on project success of the organization, where the degree of implementation of project managers' competencies are ranging from 3.65 to 4.16 with a standard deviation that ranges from 0.721 to 0.998. Such results show that there is an agreement

on moderately high level of competency of project managers. The mean of the total project managerial competencies variables is 3.88 with a standard deviation 0.766, which indicates that there is an agreement on moderately high presence of these variables; this result is consistent with the result of the Galvin, et. al. (2014) study that explored the importance of competencies, management techniques and leadership styles that effective project manager uses to manage individuals and teams to produce high-performance project success and positive business results. As well as, it is consistent with the result of the Briere, et. al. study that pointed the importance of human skills and behavioral competencies in managing successful project.

Based on the regression analysis, the results of project managers' competence effect on project success ranked as:

1. Skill competency have highest weight and have more effect on project success based on the result of this study in having significant effect on project successes. As supported by different literatures in chapter two of this study both soft and hard skill are mandatory to have a success on project. Since communication is major and leading part on project management activities, respondents give more weight for this issue. Creative thinking, inspiring others to motivate, showing commitment for project activities in order to be consistent and to track the status are major points for success of any project. Working more on project competency will increase the effect of the success more.
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. Also, 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 now 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 in his/her KPI. 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.

From the above, results show that all the project managers' competencies have a positive effect on project success in Ethiopian Airlines Group. Therefore, all the variables of project managers' competencies have a direct significant effect on project success.

5.2. Conclusion

As described on the introductory section of this study, project managers' competence is critical for the project success of an organization. Since, project managers are main assets used to operate the overall task of a project in an organization, knowing the competency of project manager is key success factor. Accordingly, the objectives of the study are to identify which project manager competency is more significant in increasing project success and fill the gap on project managers of Ethiopian Airlines Group. Thus, based on the major findings stated above, the following conclusion has been reached.

Regarding skill competency of project managers', the result displayed that it has a high major significant effect on the success of a project than other variables both on correlation and regression result. Skill is critical competency variable in increasing the success rate of projects. In order to effectively manage and lead in any project environment, a person should develop both soft and

hard skills. These is identified as a major gap and hence the organization needs to take immediate action to resolve the drawbacks of the practice. Other studies also showed that skill competency is the first major quality of successful project manager. If improved the regression result clearly indicates that it will enhance firm productivity since it is identified as a positive predictor variable.

Knowledge competency have moderately high significance effect when compared to skill on the project success as per the result. This is a positive finding and a proof that the organization needs to assign project managers for this position by selecting best employees out of the labor market from either internal or external workforce by understanding its criticality in ensuring both the short term & long-term existence of the organization since the cost of wrong assignment for this position will create additional resource wastage.

Finally, when coming to attitude competency, it has positive significance effect next to skill and knowledge in enhancing the organization's project success. Applying attitude competency practice well is found to have a significant high correlation with project success which is also proved to be significant and positive predictor of project success from the regression analysis. Since, human beings have feelings and are emotional, making them hard to deal with, organizations don't make decisions, people do. In the end the people are going to judge and be affected by the end results of the project. That is why the interpersonal competences are so important. Since attitude is majorly human behavior it will be developed through experience. The firm should consider when assign to this position.

As mentioned in the problem statement of this study paper, in the company project managers are selected from functional areas in the organization with functional expertise (a subject matter expert – SME) with little or no consideration to the project management competency dimensions. As per the result of this study among the competency dimensions, the effect of skill is less this shows there is skill gap. But, as per the result of other studies, project managers' skill competency has high effect.

Achara (2016) on his study, to enhance project performance he concluded Project managers should need Firstly to possess the required Knowledge and Skills. Secondly, Project Manager give priority to Behavioral Competence (Delegation, Leadership, and Team-working). Thirdly, Project Manager develop their project team. According to Kloppenborg (2011), in order effectively manage and lead in a project environment, a person should develop both soft and hard skills. Also, Levenson

et al., (2006) concluded on his study, hard skill and soft skill attribute of competencies play an important role for project managers. The project managers benefit a lot by developing these competencies and support the improvement of project performance.

Project success in general can be viewed from different perspectives like time, cost, quality, customer satisfaction, identified risks, benefit and other dimensions as per different studies. Failing to do a single dimension will take the project to failure. As per this study, success is taken as a function of time, cost and quality and analyzed by taking overall average as per the study design.

Finally, to conclude on the importance of Project Managers' Competencies for project success, the study showed skill has rated the highest importance, followed by knowledge and finally attitude. Also, there is a strong relationship between Project Managers' Competencies variables, and also with Project Success. Likewise, there is strong relationship between the overall Project Managers' Competencies and 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:

- The current study recommends and emphasizes the development of competencies of all project managers by involving them on a training and knowledge development programs in order to develop their both soft and hard skills (e.g. PRINCE2 training started currently for IT PMs). Since communication, problem solving idea generation will be included on trainings.
- When recruiting for a new project manager, 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, the organization should have to regularly assess their competency level using a qualified competency measurement based on the standard.
- Always measure the status of the project against the plan to know its success or failure.

- Prepare and design continuous programs for project managers aiming at providing them with the capabilities, personal skills and strategic vision at all organizational levels.
- Develop reflection sessions between project managers and their teams to review, identify, and improve the competencies of the employees majorly attitude since it is related to personality.

5.4. Limitation of the Study & Suggestions for future research

The study is intended to examine the effect of project managers' competence on project success. In this regard, the research obtained valuable results however there are some potential limitations discussed below.

- This study is done on three sections of a single organization which makes it indicative but not fully conclusive. Thus, future studies in this area could be done in a broader geographic scope and including other firms to increase conclusiveness of the findings.
- Among different project managers' competencies and project success variables, this study used limited ones and get reliable result with other studies. So, in the future studies including more variables will help to know the effect better.

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Appendix 1: Questionnaire

**ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE
OFFICE OF GRADUATE STUDIES
MA IN PROJECT MANAGEMENT
SURVEY 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 assess the effect of Project Managers Competencies on Project success in the case of Ethiopian Airlines Group. 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: +251-911-732-007 Or +251-115-178-994

Thank you in advance, for your time.

Samuel Nigatu.

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 ☐ Above 40 ☐
3. Education Level: Bachelor Degree ☐ Postgraduate diploma ☐
 Master's Degree ☐ Other: Please specify _____
4. Highest size of the project on which you have worked with (*based on the project's budget and currency=USD*)

Small (<50k\$)	☐	Intermediate (50k\$ - 150k\$)	☐
Large (150k\$ - 300k\$)	☐	Very Large (>300k\$)	☐

5. Experience in Ethiopian Airlines:

< 5 Years ☐ 5-9 years ☐ 10–15 years ☐ >15 years ☐

6. Overall experience as a project manager

< 5 Years ☐ 5-9 years ☐ 10–15 years ☐ >15 years ☐

Part 2: Project Managers Competency

Instruction: Please carefully read the below listed sentences and put a tick mark (✓) in the box which you believe describes to which degree 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		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		1	2	3	4	5
2.1	The project manager communicates with their teams frequently.					
2.2	Encourages creative ideas.					

2.3	Provides direction to inspire others.					
2.4	Uses creative thinking process to solve problems.					
2.5	Tracks his weaknesses and strengths					
2.6	Preforms consistently in a range of situations under pressure and adapts behavior appropriately.					
2.7	Shows personal commitment to pursuing an ethical solution to a difficult business issue or problem.					
3. Attitude		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 3: Project Success

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

Project Success		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.					
5	The project met most of the scheduled milestones					
6	The project was finished on time					
7	The Project boosts the employees' abilities by helping to save time.					
8	The critical tasks and delivery dates were not slipping.					
9	The Project was handed upon the company's overall standards.					
10	The project deliverables always fulfil the customer requirements					
11	The project meets its business objectives					
12	Setting alternative plans has reduced the unexpected risks possibility.					

Thank you for taking the time to complete this questionnaire.

Appendix 2: Correlation and Regression Results

Correlations

		Knowledge	Skill	Attitude	PM Competencies	Project Success
Knowledge	Pearson Correlation	1				
	Sig. (2-tailed)					
Skill	Pearson Correlation	.622**	1			
	Sig. (2-tailed)	.000				
Attitude	Pearson Correlation	.562**	.600**	1		
	Sig. (2-tailed)	.000	.000			
PM Competencies	Pearson Correlation	.796**	.741**	.726**	1	
	Sig. (2-tailed)	.000	.000	.000		
Project Success	Pearson Correlation	.775**	.808**	.755**	.924**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

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

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Attitude, Knowledge, Skill ^b	.	Enter

a. Dependent Variable: Project Success

b. All requested variables entered.

Model Summary^b

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	.913 ^a	.833	.820	.292	.833	64.806	3	39	.000	1.446

a. Predictors: (Constant), Attitude, Knowledge, Skill

b. Dependent Variable: Project Success

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.542	3	5.514	64.806	.000 ^b
	Residual	3.318	39	.085		
	Total	19.860	42			

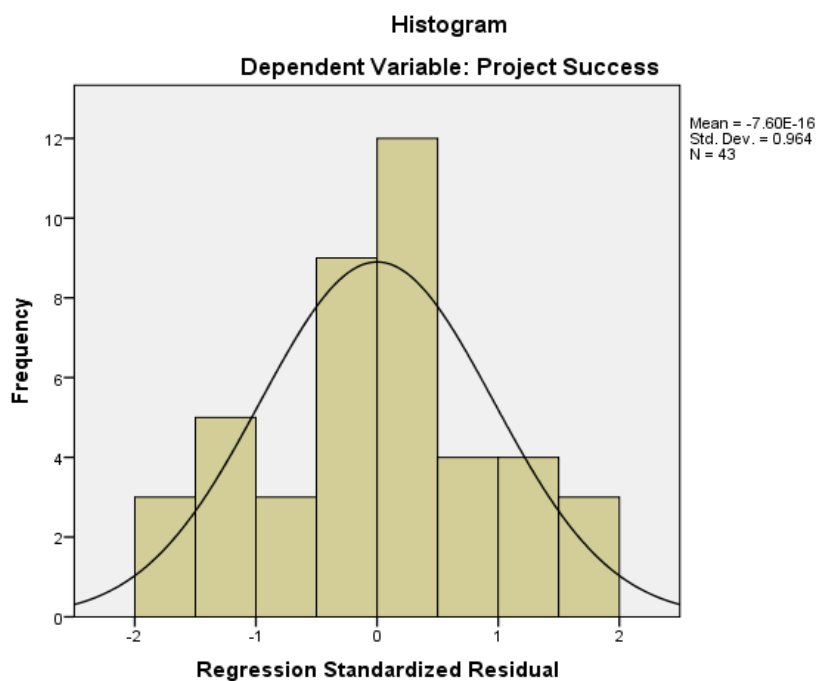
a. Dependent Variable: Project Success

b. Predictors: (Constant), Attitude, Knowledge, Skill

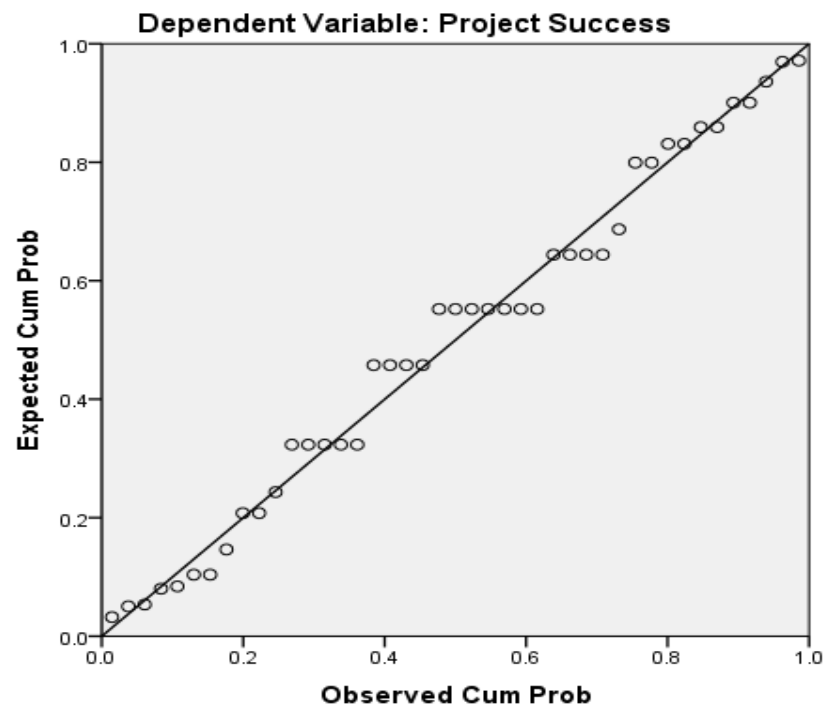
Coefficients^a

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)	.180	.270		.666	.509	-.366	.725		
	Knowledge	.315	.080	.345	3.938	.000	.153	.477	.558	1.794
	Skill	.335	.076	.401	4.428	.000	.182	.488	.522	1.915
	Attitude	.294	.079	.320	3.732	.001	.134	.453	.582	1.718

a. Dependent Variable: Project Success



Normal P-P Plot of Regression Standardized Residual



Scatterplot

