

The Effect of Project Cost Management on Project Success: The Case of Selected Real Estates in Addis Ababa

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**“The effect of Project Cost Management on Project Success:
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Declaration

I hereby declare that this project paper entitled “***THE EFFECT OF PROJECT COST MANAGEMENT ON PROJECT SUCCESS: The Case study of selected Real Estates in Addis Ababa***” is my original work. This work did not submit for a degree to any other university and that all sources of material used for the paper were duly acknowledge.

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Endorsement

This thesis entitled "***THE EFFECT OF PROJECT COST MANAGEMENT ON PROJECT SUCCESS: The Case study of selected Real Estates in Addis Ababa***" has been submitted to Addis Ababa University School of Commerce, Department of Project Management, with my guidance and approval as a university advisor.

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ABSTRACT

The main objective of this research is to determine the effect of **Project Cost Management** on **Project Success** on selected real estates in Addis Ababa. While the Project Cost Management processes measured by **Plan Cost Management, Estimate Costs, Determine Budget, and Control Costs**. The Project Success dimension was measured by cost. Thus, the research focused on real estate companies found in Addis Ababa namely Sunshine Real Estate, Country Club Developers, Gift Real Estate, Pluto Real Estate, Noah Real Estate, and Metropolitan Real Estate. A quantitative research approach has been used to statistically determine the effect of Project Cost Management on Project Success. Primary data collected through a questionnaire that has been designed systematically and it was distributed among respondents working in the randomly selected Real Estates companies. Descriptive statistics were applied to examine the effect of the Project Cost Management (the independent variables) on Project Success (the dependent variable). The result shows that Plan Cost Management, Estimate Costs and Control Costs have high effect on Success of the projects. However Determine Budget No effect on Success of projects. Generally, this implies that Project Success can be improved via improving Project Cost Management practices within the selected Real Estate companies.

Key Words: Project cost management, Project cost planning, Cost estimation, Determining Budget, Cost controlling, Project Success

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Acronyms

EVA	Earned Value Management
PLC	Private Limited Company
WBS	Work Breakdown Structure
PMBOK	Project Management Body Knowledge
PMFDEV	Project Management For Development Organizations
SPSS	Statistical Package for the Social Sciences
MSP	Microsoft Project
MUDHCo	Ministry of Urban Development, Housing, and Construction

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

A project is an activity that is limited by time and resources such as cost, materials, equipment, and people, so it requires good project management. According to PMBOK (2017) "knowledge, skills, tools, and techniques are project management function to meet the project needs. Project management allows organizations to run projects effectively and efficiently". Many projects start with great vision, massive investments and huge efforts. Nevertheless, almost most do not achieve much success. For project management, Project Cost Management has become a requirement for the project's success. Successful projects required project cost management to manage and evaluate the progress of the project. The successful end of projects across different sectors and industries is one of the most significant reasons that determine the development and growth of many nations Maylor et al. (2006). The PMBOK (2017) explained that the project cost management process consists of Plan Cost Management, Estimate Costs, Determine Budget, and Control Costs. Moreover, PMBOK (2017) stated that Project cost management is predominantly concerned with the cost of the resources required to complete scheduled project activities during the execution stage and this includes the cost of using in tendering, construction, maintaining, and supporting results of the project.

Usually projects are considered as successful when they meet the time, budget, and performance goals Shenhar et al. (2001). Hence, project success has been a critical topic in the project management literature Handfield et al. (2015). A successful project implies that the project has retained its technical performance (quality, cost, and time), within its schedule, and within budgetary cost Frimpong et al. (2003). Hence, the objective of the research is to access the effect of project cost management on project success by considering cost only as success factor

and analyzing how specifically the cost element would influence the project success on selected real estates.

From many real estate companies in Addis Ababa, this research assesses the effect of project cost management on project success of the selected real estate namely Sunshine Real Estate, Country Club Developers, Gift Real Estate, Noah Real Estate, Pluto Real Estate, and Metropolitan Real Estate.

1.2 Overview of the Real Estate Companies

Real estate development has become one of the fastest-growing sectors in The Ethiopian Economy. According to the World Bank report in 2018, the construction industry has contributed 3.5 % to overall Ethiopia's GDP growth that registered 10.9% in 2017. The real estate industry coupled with the construction industry accounted for 14.9% of the GDP in the 2008/2009 fiscal year. There has been a rapid growth in real estate investments in Ethiopia as evidenced by an annual growth rate of 11.4% for the last five years (Access, 2010).

With Ethiopia's economic growth rate, the rapidly changing real estate landscape in Addis Ababa is one of the more visible aspects of the extended period of growth recently experienced in Ethiopia (Access, 2010). The residential real estate development in Addis Ababa takes a big share in the industry. According to Addis Ababa Investment Agency, it has issued over 200 real estate project licenses with annual growth of 22 % (Tadesse, 2013). The observed increase in the scope and scale of real estate activity is driven by multiple factors. The factors include overall economic growth, rise in urban population, a long-standing backlog of unmet housing demand, the expansion of city roads and infrastructure, tax and investment schemes, extended lease periods, and reduced income tax incentives (Access, 2010).

Let see the background of the real estates involved in this research.

Sunshine construction, under Sunshine Investment group founded in 1984 with less than 10 employees. Three decades later, it currently has more than 3000 employees with a project delivery record of accomplishment of 984 kilometers of road projects, 427 residential houses, and 3254 apartments (Sunshine, 2021).

Country Club Developers Private Limited Company was founded in 2002 with the vision to construct top quality residential houses considering the demand for quality housing with its facilities. CCD Built and delivered over 450 Homes (Country, 2021).

GIFT Real Estate is engaged in real estate development in Ethiopia for both residential and commercial purposes. It has been operating in the house construction business for more than 16 years.

Noah Real Estate was founded in 2013. Where it has delivered 5 commercial and 8 residential buildings with additional 11 projects underway in various sites of Addis Ababa. Within this 7 years' familiarity, Noah has built a total of 21 projects which is equivalent to 720,000 sq. m. of a concrete slab (Noah, 2021).

PLUTO is a family-based shareholders company founded in 2012. Motivated to build first-class properties across the heart of Addis Ababa. Enthused by a shared ambition to be the best in Ethiopia and elsewhere, The Company strongly characterized by creativity, high demand for quality, and reliability. Manage to deliver 36 villas since established (Pluto, 2021).

Metropolitan recognized in 2016, as an established property development company focused on creating homes packed with functionality, convenience, and comfort for today's modern lifestyle seeker and savvy investor. Metropolitan real Estate is introducing excellent luxury high-end apartments to Addis Ababa's key areas. Built and delivered two apartments namely Sarbet Gebrial Apartments and Bole Midtown apartments on time (Metropolitan, 2021).

1.3 Statement of the problems

Projects generally fail because of poor planning, constant changes in the scope, cost overrun, and project delay. Due to the nature of the business, companies that are engaged in The Real Estate industry are expected to apply project management widely. On other hand, many problems are observed in Real Estate projects. Of the common problems, delay of projects, cost escalation of projects, not meeting of required specifications, and discontent of customers raised. For instance, some Real Estate companies collected advance payments but could not

deliver what they promised to their customers due to different reasons. There are other companies, which engaged in contracts with their customers but transferred incomplete houses to customers because of financial constraints due to inefficient project cost management.

According to MUDHCo. (2012) also reported that a significant number of companies received plots of land for Real Estate development. However, in the middle of their projects, they change project scope by redesigning houses to smaller ones for the sake of budget constraints. This observation shows there is a problem in project cost management. Thus, this study will try to show the effect that is encountered by Real Estate companies up on applying project cost management on project success and answers the following research questions.

1.4 Research Questions

To achieve a realistic conclusion, this research paper aims to answer the following specific research question:

1.4.1 Specific Research Question

1. What is the effect of planning cost Management on Success of Projects?
2. What is the effect of estimating costs on Success of Projects?
3. What is the effect of determining budgets on Success of Projects?
4. What is the effect of controlling costs on Success of Projects?

1.5 Research Objectives

1.5.1 General Objective

The main objective of the study is to determine the effect of project cost management on project success on selected real estates.

1.5.2 Specific Objectives

The specific objectives are:

1. To identify the effect of planning cost Management on Success of Projects?
2. To identify the effect of estimating costs on Success of Projects?
3. To identify the effect of determining budgets on Success of Projects?
4. To identify the effect of controlling costs on Success of Projects?

1.6 Scope of Study

This research is a case study of real estate companies, which assess the effect of project cost management on project success. Also the study focus and analyze the process of project cost management only such as Plan Cost Management, Estimate Costs, Determine Budget, and Control Costs. Other factors, which affect Project Cost Management out of the scope of this study. Moreover, Success factor considered for this study is cost. Other factors that could affect the Success of projects like schedule, quality, and scope management are beyond the scope of this study.

1.7 Limitation of Study

Since this research study done within two months there is a time limitation to increase the number of sample size, to use secondary data and there is also a budget limitation. The other thing that can be taken as a limitation is the respondent knowledge most involved in this research are engineers and project

managers. So no finance knowledge respondent involved in this research this may affect determine budget and control costs factors.

1.8 Significance of Study

Considering the role of real estate's development towards economic and social development, it would be helpful to achieve projects accomplished within the schedule, budget, and quality. In this regard, it is believed that project cost management is very important to provide management with cost-related information for making decisions to complete the project with specified constraints.

This study is expected to reveal the effect of project cost management practices on the overall success of the projects. This study will add knowledge to the existing literature on project cost management. It is also expected to suggest important recommendations which would be important to real estate companies, also will be used as an input for individuals who are interested in Project Cost Management to undertake further studies.

1.9 Organization of Study

This research paper is organized into five chapters. The first chapter presents the introduction, background, statement of the problem, research questions, the objective of the study, the significance of the study, scope, limitation of the study, and brief structure of the study. The second chapter dwells on a review of literature from the perspectives of scholars in this area of study. The third chapter presents the research methodology. It includes the research design, source of data, sample, sampling technique, and data collection techniques. Then chapter four shows the analysis, presentations, and interpretation of the collected data. Finally, chapter five will include a summary of major findings, conclusion of the study and suggests possible remedial recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Review of Theoretical Studies

2.1.1 Project Success

According to the literature, there is no single definition of project success. Several researchers define project success in different ways. According to PMBOK (2017) project success is measured in terms of “completing the project activities within the constraints of scope, time, cost, quality, resources, and risk as approved between the project managers and senior management”. Verma (1995) writes that communication, teamwork, and leadership are vital components of effective management of a project. Human resources are necessary to accomplish project objectives. Cleland (1986) suggested that "project success is meaningful only if considered from two vantage points: the degree to which the project's technical performance objective was attained on time and within budget; the contribution that the project made to the strategic mission of the enterprise". Project success is accomplishing the planned results and objectives in compliance with preset conditions of time, cost, and performance Beleiu et al. (2015).

2.1.2. Project Cost Management

Project Cost Management is a knowledge capability and expertise in planning and monitoring costs for a construction project as well as weighing the potential of risks that lead to increment of construction costs (Young, Lbbs, 2002). Cost management is a process of controlling expenses on construction projects in every stage from feasibility to handover and ensuring that the cost plan is still in place. Dof (2009) also supports this, who states the process in cost management involves various work phases that include the initial stage, the planning stage, the implementation stage, the control stage, and the completion stage.

The PMBOK (2017) determine that “the project cost management process consists of Plan Cost Management, Estimate Costs, Determine Budget, and Control Costs”.

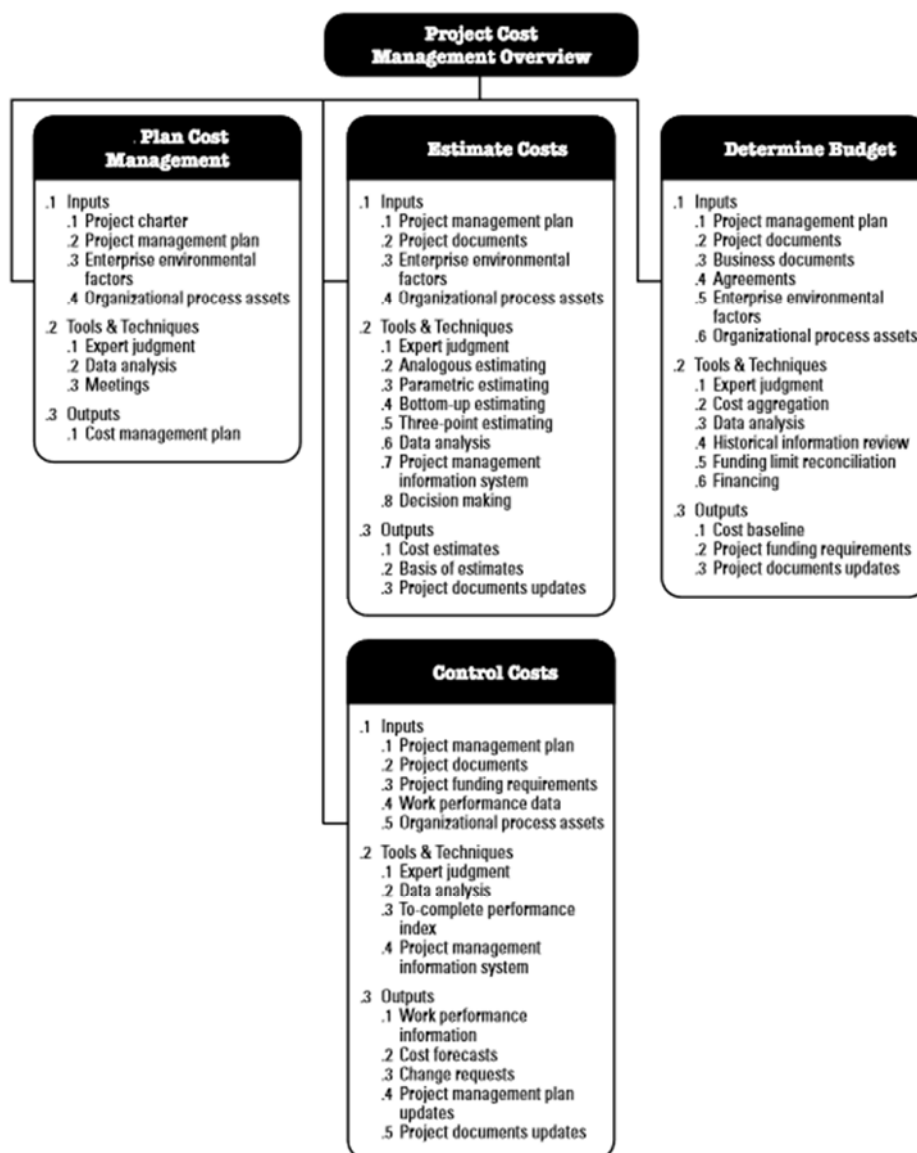


Figure 1 Project Cost Management Overview

Source: Project Management of Body of Knowledge (PMI, 2017)

2.1.2.1 Plan Cost Management

“Plan cost management is a method of how the project costs will be estimated, budgeted, controlled, and monitored. The main benefit of this process is that it gives direction on how the project costs will be managed throughout the project. This process is performed at predefined points or once in the project” (PMBOK, 2017).

2.1.2.2 Estimate Cost

“Project cost estimation is the process of developing an approximation (estimate) of the costs of the resources needed to complete project activities including labor, equipment, materials, services, and any contingency costs. In approaching cost, the estimator considers the reasons of variation of the final estimate for purposes of better outcome. It involves identifying and considering various costing alternatives” (PMBOK, 2017). Stephen et al. (1994) State that "estimating is the fundamental process of answering the question how much is the project expected to cost? When project estimates are wrong will have a negative effect because the financial debt to a construction project is enormous". According to Pico (2014), cost estimation is defined using the preliminary working drawings, plans, or blueprints. Akintoye (2000) defines cost estimation as a technical function that is conducted to predict the total cost of the project in a given item with the use of the available information and resources associated to the project. Forbatok (2014) described that estimating costs contains developing an estimate of the costs of the resources needed to finalize a project. if they want to complete projects within budget constraints, project managers must take cost estimates seriously. Cost estimates prepared in the early stages of a project allow a client to evaluate the most economical tenders, secure funding, or perform a cost-benefit analysis. These estimates also often become the basis for cost control during project delivery Ahiaga et al. (2015).

2.1.2.3 Determine Budget

“Budgeting denotes the method of mixing the estimated costs of work packages or individual activities to make an approved cost baseline. They function as a control mechanism that sets the standard against which future expenditures will monitor. With timely data collection and reporting, they enable the project team to identify and report current problems to anticipate future ones. When done properly, they relate the use of resources with the achievement of corporate goals” (PMBOK, 2017).

Determining the budget contains allocating the project cost estimate to individual material resources over time. These material resources are centered on the activities in the work breakdown structure for the project. The main objective of the cost budgeting process is to produce a cost baseline and to determine project-funding requirements.

According to Weetman (2003), a budget is a financial evaluation of the future courses of action set out in a business plan. It is a comprehensive plan, which sets out in forms of money, the plans for income and expenditure with respect of a future period. The budgetary process fits into the overall planning process, it evaluates the financial consequences of the plan and provides financial feedback so that plans are monitored and revised (Marsh, 2009). By evaluating the project's actual cost against the approved budget, can determine if the project is progressing according to the plan or if corrective action is needed (Sunidjijo, 2015).

Budget management consists of a series of tasks and steps designed to help manage the costs of the project, the steps: Defining the Budget, Executing the Budget, Controlling the Budget, and Updating the Budget. As per PMFDEV (2015) Budgeting serves as a control mechanism where actual costs are compared with and measured against the budget. The budget is usually a group parameter within the execution of the project. When a schedule begins to slip, the cost is proportionally affected. When project costs begin to escalate, the project manager should revisit the project decide to determine whether the scope, budget, or schedule needs adjusting.

2.1.2.4 Control Costs

Cost control is viewed as the process of monitoring the status of the project to update the budget and changes to the cost baseline. It involves taking the cost baseline and performance data about what has been done to determine the work accomplished against the amount spent (PMBOK, 2017).

Controlling project costs include monitoring cost performance, ensuring appropriate project changes are included during a revised cost baseline, and informing project stakeholders of authorized changes to the project that will affect costs. People often perform better once they know they need to report on their progress. Performance measurement is another very important tool for cost control.

According to Amanuel et al. (2018) Contractors' cost controlling scheme gives much attention to the material cost component. However, attention should also give to labor and equipment costs for they could affect the project as much as the material component.

2.1.3 Factors Affecting Project Cost Management

Cost control is an essential element to ensure the success of the project. Currently, even though various cost control systems, are followed by many contractors. Cost overruns are frequent problems in the construction industry. "Project Management and Cost Engineering have made tremendous advances during many decades, Nevertheless still witness all severe budget overruns and delays" (Lichtenberg, 2015). This shows that contractors should follow the effective implementation of the cost management process to succeed in their business.

2.1.3.1 Cost Management Plan Related Factors

Planning aims to ensure how the project will be estimated, budgeted, managed, monitored, and controlled. Some of the factors which influence planning as identified from PMBOK (2017): Preapproved financial resources, Schedule & Risk Management plan, organizational culture and structure, market condition &

exchanges rates, published commercial & project management information, productivity differences, financial controls procedures, exiting formal, informal cost estimating, budgeting, financial database, strategic funding, level of accuracy, organizational procedures links, reporting formats.

2.1.3.2 Estimate Cost Related Factors

Cost estimating is a prediction of costs and resources needed to complete the project tasks and activities. The accuracy of such estimates has a serious effect on the time of completion of the project and the expected profit of the construction contractor. Hence, cost estimators (surveyors, Engineers) should be aware of the factors that influence the accuracy of cost estimation.

According to Mohammed et al. (2018) the top ten factors affecting the accuracy of cost estimate are clear and detailed drawings, specification, pricing, the experience of construction projects, perception of estimation importance, equipment (cost/availability/performance), project complexity, clear scope definition, accuracy, reliability of cost information, site constraints(access, storage, services), material availability, financial capabilities of the client, and availability of a database of bids on a similar project (historical data). Akintola (2000) Stated that the main factors relevant to cost estimating practice are the complexity of the project, scale, and scope of construction, market conditions, method of construction, site constraints, client's financial position, buildability, and location of the project. Asal (2014) identified twelve factors as the most important factors. These factors were: economic instability, quality of firm's project planning and management, relevant experience of estimating team, availability of management and finance plans, the ability to estimate, labor and equipment required, estimating method, project location, periodical payments, the accuracy of bidding documents provided by the client, competent and leadership of project manager and impact of the project schedule.

2.1.3.3. Determine Budget Related Factors

The ability to predict, develop and manage a budget is an important skill for every manager in an institution. Therefore, every management level in an organization holds some degree of responsibility towards budget management.

Currently, there are various methodological approaches to budgeting and their application is dependent on goals to achieve and management techniques. Accordingly, there are various factors, which influence the process of budgeting. From various literature reviews the following are identified as factors poor WBS definition, inaccurate activity cost estimate, unavailability of supporting details of estimated cost, inaccurate/impractical schedule, schedule variance, lack of experience in the type of project, incorrect planning, underestimation of project duration, lack of experience, the practice of assigning a contract to the lowest bidder, unavailability of resource calendars, not having a risk register, the inadequacy of the details of cost-related items in the agreement, not implementing project management tools and techniques (primavera, MSP, EVA), not updating budget after variation or changes, less contingency allowance, company policies and procedures of cost and coordination between client and consultant.

Kira et al. (2016) stated external factors which influence the process of budgeting as Competition, scientific and technological progress, international relations, macro and microeconomics, a political situation, and the social segment are among such factors. Besides, modern conditions affecting the internal factors identified as industrial; technological and organizational; human resources; automation, and corporate information systems. Project size, project similarity, frequency of the budgeting control system, and documented project risk management application identified as main factors, which affect staying within the budget of an IT project Barbara et al. (2015). Jan (2014) The budgeting process, classified the mission, fiscal policies, compensation goals, pricing policies, management style, accountability, debt policies as internal factors which affect the project budgeting and sources of support, government regulation, competition for workers, and Inflation as external factors affecting the budgeting process.

2.1.3.4 Control Cost Related Factors

“The aim of project controls are to make sure projects completed as per the schedule, within the contractual budget and per the standard required. In practice, it is a complex task undertaken by project managers which involves constantly measuring progress; weighing plans, and making corrective actions when required” (Kerzner, 2003).

To achieve success, the project manager should follow a proper cost controlling and monitoring system throughout the project cycle. Implementing the proper project control system requires avoiding factors affecting the process. From various collective literature reviews the following are identified as factors which are related to cost control process allowance of numerous variations during project implementation, schedule change, construction methods change, weak instruction and control, conflict between teams, unqualified/ inexperienced labor, rework at site, experience in similar project, level of construction and site complexity, often changing subcontractors, poor site management and supervision, change in design / scope, communication errors, force majeure, unpredictable weather conditions, risk and uncertainty, low productivity of labor, high cost of labor, problems associated with overtime, accidents, implementation of management information systems in cost updating, co-ordination between client and contractor, not using project management tools for monitoring and control, improper records for all types of communications and delay in progress payments .

2.2. Empirical Literature Review

In this section, previous studies related to this project work reviewed. As per Roger (1999) in his previous study "Time and costs are at best only guesses, calculated at a time when least known about the project. Quality is a phenomenon; it is an emergent property of people's different attitudes and beliefs, which often change over the development life cycle of a project. Why has project management been so reluctant to adopt other criteria in addition to the Iron Triangle, such as stakeholder benefits against which projects assessed? This paper proposes a new framework to consider success criteria". This paper agreed that project cost management and project success have a direct relationship.

In their study, Akewushola et al. (2012) identified that there is a significant relationship between Project cost and acceptability by clients. Therefore, it was recommended among others that total project cost on the side of clients should be minimized. By using innovative enough and creative project manager in the apportion of project cost without reducing the quality of the project. In this study also project cost management and project success have a direct relationship.

Moreover a recent study in Ethiopia by Solomon (2017) revealed that project cost management explained that resource planning, cost estimating, cost budget and cost control has a significant association with the overall success of the project management.

Aftab et al. (2012), the research work identified that time and cost performance are the fundamental criteria for the success of any project. Unfortunately, the construction in Malaysia is regarded as an industry facing poor performance leading to failure in achieving effective time and cost performance. Therefore, most projects face a huge amount of time and cost overrun. The findings of the study revealed that 92% of construction projects overrun and only 8% of projects could achieve completion within contract duration. The amount of time overrun was between 5-10% as agreed by respondents. In relation to cost performance, only 11% of respondents mentioned that normally projects are finished within the budgeted cost while 89% of respondents agreed that projects were facing the problem of cost overrun with an average overrun at 5-10% of the contract price. The major factors to this poor performance include design and documentation issues, financial resource management, and project management, and contract

administration issues. Further, a qualitative study was carried out using semi-structured interviews with the experienced personnel involving in managing a construction project, which resulted in developing 13 mitigation measures to improve time performance and 15 mitigation measures to improve cost performance. The study will help the practitioners to implement the mitigation measure at the planning stage to achieve successful construction projects.

2.3. Research Gaps

There have been several valuable studies of project cost management on success, the majority of which seem to agree that project cost management major contributor to success Vasista et al. (2018). The review of the literature shows that there are researches that were carried out mostly from the USA, Malaysia, Iran, India, Nigeria, United Kingdom, and the like. Not much of the studies carried out on Project Cost Management about project success from Ethiopia's perspective, especially to the real estate sector. The few that carried out have focused on project cost management on success only on a different company's perspective (Solomon 2017, Sirgute 2018, Heron 2018). Therefore, another knowledge gap that will address by this study in an attempt to add to the body of knowledge is to give the research an Ethiopian real estate perspective.

2.4. Conceptual Framework

According to PMBOK (2017) each process of project cost management has Input, output, and outcomes. Thus, this research work tries to assess the effect of Plan Cost Management, Estimate Costs, Determine Budget, and Control Cost processes concerning their input, output, and outcomes on the success of the real estate projects. Based on the above literature review the below conceptual framework is developed.

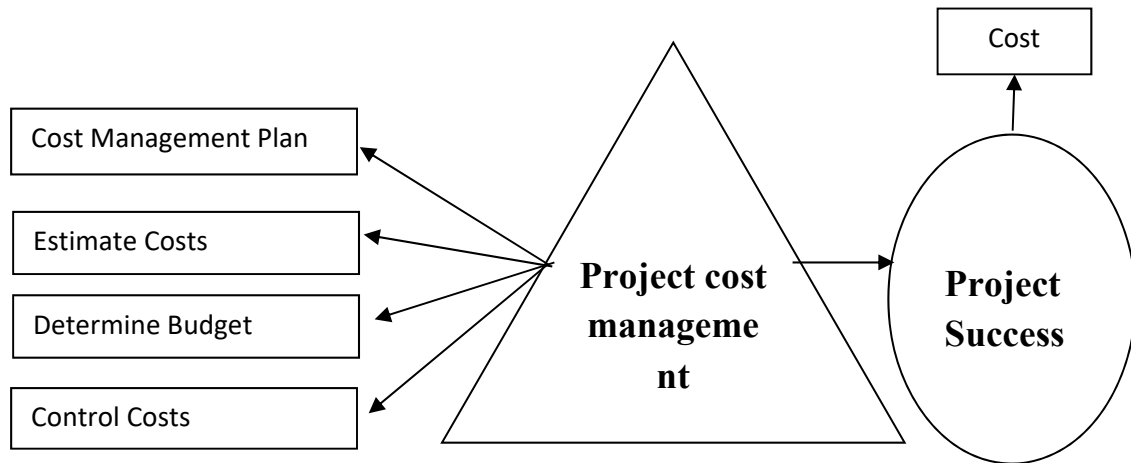


Figure 2: Conceptual framework

Based on the above conceptual framework, the following hypotheses are presented.

H₁: There is a positive and statistically significant relation between project cost management plan and project success.

H₂: There is a positive and statistically significant relationship between estimating costs and project success.

H₃: There is a positive and statistically significant relationship between determining budget and project success.

H₄: There is a positive and statistically significant relationship between control costs and project success.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Approach

The research approach used in theory development is deductive reasoning because it is either theory falsification or verification. Generally, there are three research approaches (1) Qualitative (2) Quantitative, and (3) Mixed methods. The approach selected for purpose of this research was the quantitative approach due to the following reasons. Quantitative research is a systematic investigation of phenomena by gathering quantifiable data and performing statistical, mathematical, or computational techniques. According to Watson (2014) quantitative research involves measurement and assumes that the phenomena under study computable. It sets out to analyses data for trends, relationships and verifies the measurements made.

3.2 Research Design

The research design adopted for this study was a quantitative design, where research questions were designed in such a way that they address the effect of project cost management on the overall success of a project.

According to Cohen (1980), quantitative research is defined as “social research that employs empirical methods and empirical statements. He states that an empirical evaluations are defined as a form that seeks to determine the degree to which a specific program or policy empirically fulfills or does not fulfill a particular standard or norm”.

3.3 Sample Size

For this research 30, relevant respondents were involved, who have direct exposure to the Project Cost management system of selected real estates. The study targeted populations were project team members who have been directly involved in the project planning and implementation of the selected real estate

developments. These people are project staff, project managers, engineers and controlling managers working in the selected real estates.

3.4 Data Types and Sources

Creswell (2009) has given a very concise definition of quantitative research as a type of research that is `explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics). Accordingly, to achieve the research objective, this research study used primary data sources. While primary data collected, using questionnaires.

3.5 Method of Data Collection

The methods of data collection used in this research study were questionnaires. Primary data collection method gathered through the administration of questionnaires to gather information from various departments of selected Real Estate with the knowledge on Project Cost Management. A close-ended questionnaire which had 22 questions developed using 5 points Likert scale to express how much the degree of effect. At a minimum, there was four questions for each dependent and independent variables. In addition, the questions was designed to meet the objective of the study and to obtain relevant information from the selected real estate staff.

3.6 Method of Data Analysis

This study employed a descriptive statistics of data analysis. The data obtained from primary sources carried-out through coding and analyzed by SPSS version 20. That is statistical methods (percentages, frequency, and mean); to show the degree of effect were the independent variables (Project Cost Management) on the dependent variable (Project Success).

3.7 Ethical Consideration

Ethical consideration is critical for the integrity, reliability, and validity of the research findings rely heavily on adherence to those principles Miller et al. (2012). Therefore, while preparing this study, made the following Ethical considerations.

- The research work will start after getting the willingness and approval of the stated organization.
- Respondents will communicate about the objective of the research before they are asked to give their answers.
- The confidentiality of responses and information obtained from the credit performers will keep properly.
- There will be NO physical or psychological damage to them because of the research
- Respondents will not ask about their name, age, race, religion, etc.
- The findings of the research will be present without any deviation from the outcome of the research. Besides, give full acknowledgments to all the reference materials used in the study.

3.8 Validity and Reliability

The structured questionnaire was prepared carefully to avoid ambiguity to maintain a precise and clear response. The selected respondents for this research experienced and had direct and indirect exposure to the Project Cost Management system of the Real Estate. To ensure, the validity and reliability of the survey questions, an in-depth discussion made with the advisor on the contents and its structure.

Furthermore, the reliability or internal consistency of the research questions evaluated using the Cronbach's alpha test, which is the most common method to measure the reliability or internal consistency of a set of items or scales. Generally, a reliability coefficient of 0.70 or higher is considered acceptable. As shown in the table below, the overall Cronbach's Alpha result of the survey is 0.956, which is

considered acceptable. That is, the result suggests that the items have relatively high internal consistency.

Table 1: Reliability Statistics

Cronbach's Alpha	N of Items
.956	22

The reliability result for each research question presented in Appendix 3 shows a Cronbach's Alpha value ranges from 0.952 to 0.956, which indicates that each of the independent and dependent variables had acceptable internal consistency.

CHAPTER FOUR

Result and Analysis

This chapter presents results of the descriptive statistics and interpretations about the effect of project cost management on the overall success of projects implemented in selected Real Estates. The effectiveness of Project Cost Management is measured by planning cost management, estimating project costs, determining project budget, and project costs control. On the other hand, the Project Success was measured by Cost.

The results of the data analysis of the questionnaires are interpreted and briefly explained in this chapter. For the explanation charts, tables and percentages are used.

4.1. Questionnaire Response Rate

Table 2: Companies and No. of respondents

Company Name	No. Questionnaires collected
Sunshine Real Estate	6
Country Club Developers	5
Pluto Real Estate	5
Metropolitan Real Estate	5
NOAH Real Estate	5
Gift Real Estate	4
Total	30

Out of the total 41 questionnaires distributed to relevant departments of selected Real Estates, 30 filled and returned. The rest 11 questionnaires were not collected due to lack of collaboration and unwillingness to give a response to the equations prepared.

Table 3: Response Rate of respondents

Status	No. of Questionnaires	Response Rate (%)
Completed and Returned	30	73%
Not Completed and Not Returned	11	27%
Total	41	100%

As shown in Table 3, above the response rate of the questionnaires was 73%. According to Mugenda (2003), the statistically significant response rate for analysis should be at least 50%. Therefore, the reliability of this research is high.

4.2. Analysis and Interpretation of Respondent's Profile

In this section the respondent's profile regarding their gender, their work experience, their educational qualifications, and their current position in the company presented.

4.2.1. The Population Characteristics

For this research 30, relevant respondents were involved, who have direct exposure to the Project Cost management system of selected Real Estates. Out of the 30 respondents selected, seven were Project Managers, 22 were engineers, and one was a member of other departments.

4.2.2. Gender distribution

Table 4: Respondents gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	15	50.0	50.0	50.0
Valid Female	15	50.0	50.0	100.0
Total	30	100.0	100.0	

As shown in Table 4, above unfortunately 50% of the respondents were female and 50% of the respondents were male.

4.2.3. Respondents Qualification/Position

Table 5: Respondents qualification/Working position

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Project Manager	7	23.3	23.3	23.3
Valid Engineer	22	73.3	73.3	96.7
Valid Others	1	3.3	3.3	100.0
Total	30	100.0	100.0	

As shown in Table 5, above 73.3% of the respondents selected from the engineering team, 23.3% of the population were from project manager position, and 3.3% from other departments. Project Cost Management affects most who are involved in the project during the implementation period. Since the study was conducted on a real estate company, project works are mostly lead by the technical (Engineering) teams. Thus, most of the population for this research was selected from the Engineering department.

4.2.4. Respondents Experience

Table 6: Educational background of the respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
Master's Degree	6	20.0	20.0	20.0
Valid Bachelor's Degree	24	80.0	80.0	100.0
Total	30	100.0	100.0	

As indicated in Table 6 above 80% of the respondents were Bachelor Degree holders and 20% with master's Degree. Hence, most of the professionals selected had enough educational background to participate in the questionnaire answering process.

4.2.5. Assessing Reliability

The researcher focused on a population, which is relevant to the objective of this research while selecting to increase the reliability of the data collected. However this Real Estate Companies have more than 1000 permanent employees. Out of those only selected groups were approached for the quantitative research. Nevertheless, experience, educational background, and involvement in Project Cost Management of the company were the main selection criteria for the population. The Chart below is prepared to elaborate the characteristics of the respondents based on their experience, educational background, and job description.

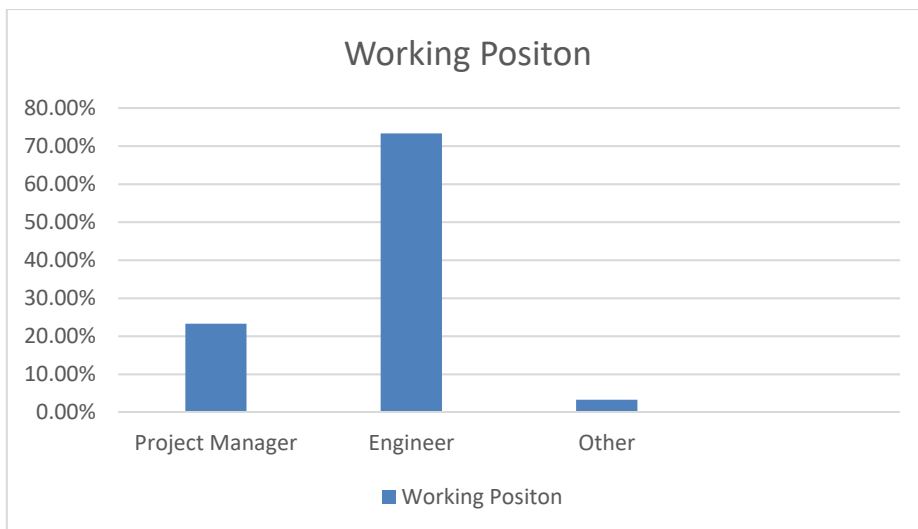


Figure 3: Respondent working position

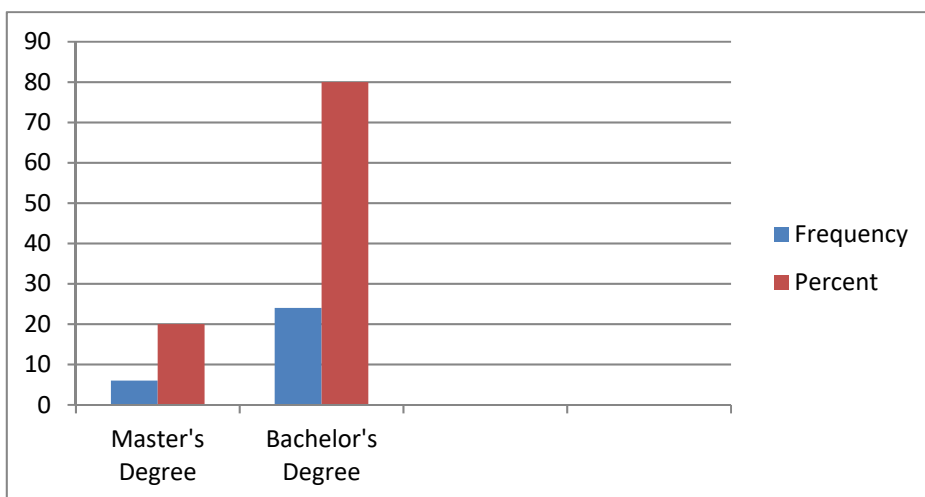


Figure 4: Respondent educational level

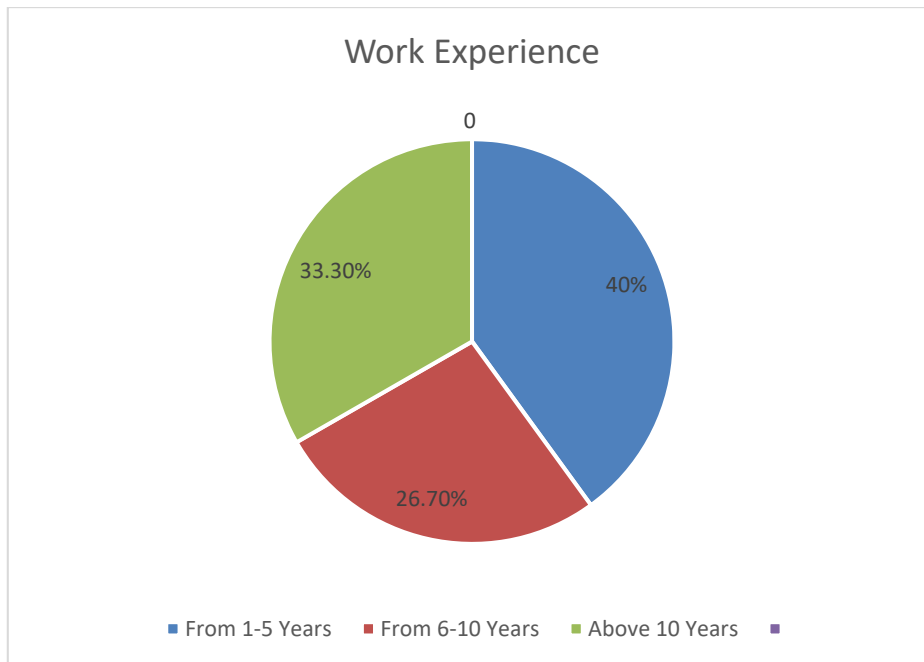


Figure 5: Respondent work experience

As shown in Fig. 3, Fig. 4, and Fig. 5 above all the selected respondents participate in each real estate project undergoing in the company. Thus, respondents are directly or indirectly involved in the Project Cost Management process of the company. Besides, from the selected population 80% of them have a better educational background and Bachelor's Degree holders. The rest 20% were Master Degree holders. In conclusion, relevant respondents with good work experience educational background, and direct and indirect involvement in the company's projects were selected for this research. Therefore, it can be concluded that the data collected from the questionnaire shows the effect of Project Cost Management on project success of Real Estate companies perceived by the above respondents as highly reliable.

4.3. Descriptive Statistics Analysis

Once again, before the actual empirical regression analysis, a simple bi-variate relationship analysis between the dependent and independent variables is briefly presented below. Unlike the multiple regression analysis, simple correlation analysis attempts to quantify the direction of the association between two variables. Thus, an assessment of the correlation matrix between the success of the project and all the independent variables are positively related.

As mentioned above, the impact of project cost management on project success was measured by effective project cost planning, project cost estimation, project budgeting, and effective project cost control. Hence, respondents were asked to rate the effectiveness of these project cost management practices in their respective Real Estate's completed projects using the Likert scale. The Likert scale was designed on a 5 scale; where 1 stands for Very low, 2 for Low, 3- Neutral, 4- High, and 5 stands for Very high. A mean score of [0-1.5] indicates that the Very low effect, mean result between (1.50 - 2.50] means Low effect, (2.50 - 3.50] means the respondents were neutral, (3.50-4.50] means High effect, and a mean above 4.50 indicates the Very high effect.

Table 7: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Cost Planning	30	3	5	3.6750	1.15600
Cost Estimating	30	1.00	5.00	3.6167	1.17018
Cost Budgeting	29	1.00	5.00	3.2352	1.21045
Cost Controlling	30	2.00	5.00	3.6200	1.00699
Project Success	30	1.00	5.00	3.8250	1.09348
Valid N (list wise)	29				

As shown from table 7, above the Cost Budgeting mean score falls at 3.24 which shows Cost budgeting did not affect (neutral) the Project Success. The others Cost Planning, Cost Estimating and Cost Controlling fall in the ranges of 3.6 to 3.8,

which shows a high effect on the effectiveness of project cost management method employed by selected Real Estates for the successfulness of the project.

4.4 Discussions of Results

Generally, results of the descriptive statistics indicate the existence of a positive and statistically significant relationship between the success of Selected Real Estate projects and the project cost management practices. Thus, the results of the analysis recommend accepting the hypothesis, which states the existence of the relationship between project cost management practices and overall project success in the selected Real Estates projects. Similarly, the effect of individual variables, planning cost management; costs estimation; and controlling costs have demonstrated a positive and statistically significant impact on the overall success of the project. However determining budget has no effect on success of projects this is may be due to the limitation of no finance professionals were not involved in this research.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATION

5.1 Summary of the Findings

This research paper makes an effort to investigate the effect of project cost management on project success by taking the selected Real Estates in Addis Ababa. While the project cost management practice measured by plan cost management, estimate costs, determine budget, and control costs. Project Success factor determine by Cost. Using descriptive statistics the project cost management components (plan cost management, estimate costs, and control costs) have scored a mean value between 3.6 and 3.8, which shows that respondents agreed on high effect on the effect of project cost management on the success of the project. However, determining budget has scored a mean value 3.24, which tells no effect (neutral) on project Success. Thus, the results of the empirical analysis direct us to to accept the alternative hypothesis, which stated as follows

H₁: There is a positive and statistically significant relation between project cost management plan and project success.

H₂: There is a positive and statistically significant relationship between estimating costs and project success.

H₄: There is a positive and statistically significant relationship between control costs and project success.

Reject the following hypothesis

H₃: There is a positive and statistically significant relationship between determining budget and project success.

5.2 Conclusions

Based on the descriptive Statistics data analysis of the research, the following conclusions were drawn on the Project Cost Management and their effect on the Success of the project. The results of the empirical study supported that generally a positive and statistically significant effect does exist between the Project Cost Management processes and Project Success of the selected Real Estate projects in Addis Ababa. This shows that project success can be increased by increasing project cost management practices. Moreover, plan cost management, estimate costs, and control costs have a positive association and high effect on the overall success of a project management. Whereas, determine budget has no effect on overall success of the projects.

5.3 Recommendations

Taking into account the above conclusion, the study makes the following recommendations.

- Results of the descriptive statics verified that Project Cost Management, explained by plan cost management, cost estimation, and cost control is found to be an important determinant of project success in selected Real Estates. Hence, project sponsors or owners should consider the need for proper project costs management throughout the project life cycle and due attention should have to be given to the activities of the company because mishandling of it, will lead to failure of projects.
- This study focused on one determinant factor of the Project Success, which is Cost. However, to provide comprehensive research finding future studies that incorporate other Success factors like project schedule, scope, and quality using such model recommended.
- From the analysis above, we have seen that only Plan Cost Management, Estimate Costs, Determine Budget and Control Cost used as factor of Project Cost Management other factors which affect Project Cost Management like stake holders and project owners are not include. So it is recommended to study including this and other factors also.

REFERENCE

- Aftab Hameed Memon, Ismail Abdul Rahman, Ade Asmi Abdul Azis (2012). Time and Cost Performance in Construction Projects in Southern and Central Regions of Peninsular Malaysia. *International Journal of Advances in Applied Sciences (IJAAS)* Vol.1, No.1, March 2012, pp. 45~52
- Ahiaga-Dagbui DD, Smith SD, Love PED, Ackermann F (2015) Spotlight on construction cost overrun research: superficial, replicative and Stagnated, In *Procs 31st Annual ARCOM 542 Conference*, Raiden A and Aboagye-Nimo E (Eds), Association of Researchers in Construction Management 7-9th Sept. 2015 Lincoln, UK, pg. 863-872.
- Akewushola, Raheem Olasupo, Olateju, Olawale Ibrahim & Hamed, Olawale Gazal (2012). "Effect of project management on project success: Australian Journal of Business and Management Research Vol.2 No.03 [01-11] 2012".
- Akintola Akintoye (2000) Analysis of factors influencing project cost estimating practice, *Construction Management and Economics*, 18:1, 77 89
- Amanuel Girma Yismalet & Dixit Patel. (2018). A critical literature review on improving project cost management practice and profitability of domestic contractors. *Int. Journal of Engineering Technologies and Management Research*, 51-58.
- Asal, E. M. (2014). Factors Affecting Building Construction: Project Cost Estimation. *International Journal of Construction*, 62-64.
- Access, Access Capital (2010). Sector report-Real Estate. [Online] pp 3-12 Available at: <https://www.ethioconstruction.net/sites/default/files/Law/Files/Sector%20Report-Real%20Estate.pdf> [Accessed 10 May.2019]
- Barbara Gładysz, Dorota Kuchta, Kazimierz Frączkowski, Andrzej Pawlicki (2015) "Factors which Influence Keeping within a Project Budget in IT Projects" S. 511–522
- Beleiu I., Crisan, E., & Nistor, R. (2015). Main factors influencing Project Success. *Interdisciplinary Management Research*, 11, 59-72

Cohen (1980), L. and Manion, L., *Research Methods in Education*, London: Groom Helm Ltd.,

Country, Country Club Developers PLC (2021). Company Profile. Available at: <http://www.ccd-homeseth.com> [Accessed 26 January 2021].

Creswell, J.W. (2009) *Research design: Qualitative, quantitative and mixed approaches (3rd ed.)*, SAGE Publications, Inc.

DoF (2009). *Capital of Works Management Framework, Guidance Note. Design and Development Process GN 2.1*. Department of Finance, Dublin

Frimpong, Y., Oluwoye, J. & Crawford, L. (2013). Causes and delay and cost overruns in construction groundwater projects in developing countries; Ghana as a case study. *International Journal of Project Management*, 21, 321-326.

Forbatok, O. (2014). *Premis-based Construction cost estimation in residential production. Premis-based Construction cost estimation*, 72.

Heron Alemseged (2018). "The effect of project cost management practice on the overall project success: a case study of enterprise resource planning project implementation in Ethio Telecom" Master Thesis in Addis Ababa University, School of Commerce

Handfield, R. B., Primo, M. & de Oliveira, M. P. V. (2015). The role of effective relationship management in successful large oil and gas projects: Insights from procurement executives. *Journal of Strategic Contracting and Negotiation*, 1(1), 15-41.

Jan Haas, 2014 TRACS Annual Conference Orlando, Florida October 22, 2014 "The Budget Process: Developing the budget and gaining institutional buy-in."

Kerzner (2009), *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*, 10th Edition. John Wiley & Sons, Inc., Hoboken, New Jersey

Lichtenberg, S. (2015). Experiences using next generation management practice. *PM world journal*, 1-12.

Marsh C., "Mastering Financial Management". Britain: Pearson Education Limited, 2009

Miller, T., Birch, M., Mauthner, M., & Jessop, J. (Eds.). (2012). Ethics in qualitative research.

Metropolitan, Metropolitan Real Estate PLC (2021). Company Profile. Available at: <http://www.metropolitanaddis.com> [Accessed 26 January 2021].

Mohammed Hiyassat, Ghaleb Jalil Sweis, Rateb Jalil Sweis, (2018) "Factors affecting the accuracy of cost estimate: case of Jordan", Engineering, Construction and Architectural Management, Vol. 25 Issue: 1, pp.113-131, <https://doi.org/10.1108/ECAM-10-2016-0232>

MUDHCo, Ministry of Urban Development, Housing and Construction, 2012, National Report on Housing & Sustainable Urban Development, ET, PP 60.

Mugenda, O. M. & Mugenda, A. G. (2003). Research methods: Quantitative and qualitative

Pluto, Pluto Real Estate PLC (2021). Company Profile. Available at: <http://www.plutoestates.com> [Accessed 26 January 2021].

Noah, Noah Real Estate PLC (2021). Company Profile. Available at: <http://www.noahrealestateplc.com> [Accessed 26 January 2021].

PMBOK, (2017). A Guide to the Project Management Body of Knowledge. Sixth edition. Project Management Institute, Inc

PMFDEV: Project Management for Development Organizations (2015). Management for development series. Project Budget Management

Pico, W. J. (2014). Electrical Estimating Methods, 4th Edition. John Wiley & Sons.

Roger Atkinson (1999). Project management: cost, time and quality, two best guesses and a phenomenon, it is time to accept other success criteria. International Journal of Project Management Vol. 17, No. 6, pp. 337-342, 1999.

Shenhar, A. J., Levy, O. & Dvir, D. (1997). Mapping the Dimensions of Project Success. Project Management Journal, June Issue, 5-13.

Sirgute Silassie (2018). "Factors affecting effective project cost management: the case of Nashcon Construction PLC" Master Thesis in Addis Ababa University, School of Commerce

Solomon Berhanu (2017). "The Impact Of Project Cost Management On The Overall Success Of Project Management: The Case of Heineken Brewery Share Company" Master Thesis in Addis Ababa University, School of Commerce

Stephen D. Scuette & Roger W. Liska. (1994). Building Construction Estimating. McGraw-Hill College.

Sunidjjo, R. Y. (2015). Project management skills for improving project performance. International journal of business performance management, 67-83.

Sunshine, Sunshine Construction. (2021). Company Profile. Sunshine Investment Group. Available at: <http://www.sunshineinvestmentgroup.net> [Accessed 26 Jan.2021].

Tadesse, (2013) Ethiopian Investment Report 2013

Vasista, T.G.K & Alsudairi, M.A.S (2016). Determining Project Management Success Model: viewing through the application of CRASP methodology. Discovery: international Journal, 52(243), 506-516.

Watson, Roger. Nursing Standard (2014+); London Vol. 29, Iss. 31 (Apr 1, 2015): DOI:10.7748/ns.29.31.44.e8681

Weetman P., "Financial & Management Accounting an Introduction". Third ed. Harlow, England: Pearson Education Limited, 2003

Yismaletet. Al., Vol.5 (Iss.1): January 2018 a critical literature review on improving project cost management practice and profitability of domestic contractors.

Addis Ababa University
School of Commerce
MA in Project Management
Questionnaire for Project Work

APPENDIX 1

INTRODUCTORY LETTER

Dear Sir/Madam;

This questionnaire is design to collect information on **The Effect of Project Cost Management Practices on Project Success**. Which I am conducting a study as a partial fulfillment of MA program in Project Management.

Thus, I kindly request you to complete the attached questionnaire. Your response is highly valuable to the outcome of the research. In addition, to test empirically the effect of project cost management on project success.

Please also note that all the information will remain confidential and the findings of this study will used for academic purpose only. I would like to express my heartfelt gratitude in advance for your time and cooperation.

Sincerely yours;

Elias Betru

N.B. For any clarification or question, please contact me through.

❖ Email: eliasbetru@yahoo.com

❖ Tel: +251930 078885

APPENDIX 2

QUESTIONNAIRE

Section 1: General Information

Kindly tick (✓) in the box for your answer to the following questions;

1. Your Gender

Male

Female

2. Your work experience

From 1-5 Years

From 6 - 10 Years

Above 10 Years

3. Your Educational background

Master's Degree

Bachelor's Degree

Diploma

Others

4. Your current working position in the company

Project Manager

Engineer

Finance

Others

	Question Related to Determining Budget					
1	Poor Work Breakdown Structure definitions					
2	Using Inaccurate cost Estimation for budgeting					
3	Lack of experience in Cost Budgeting					
4	Using inadequacy of the details of cost related items in the agreement for budgeting					
5	Not updating budget after variation of changes					
	Question Related to Controlling Cost					
1	Allowance of numerous variations during project implementation					
2	Change in schedule and construction methods for cost controlling					
3	Week monitoring and reporting methods					
4	Having conflict between project participants for cost controlling					
5	Lack of proper training and experience in Cost Controlling vicinity					
	Question Related to Cost performance (Success)					
1	Project efficiency					
2	Project effectiveness					
3	Project cost overrun					
4	Project contract conditions					

APPENDIX 3

RELIABILITY STATISTICS

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Having project charter or preapproved financial resources for the project.	71.2083	345.216	.584	.952
Having schedule & risk management plan for the project.	71.3333	324.667	.743	.950
Using financial controls procedures, financial databases, historical information and lessons learned repository for planning	71.7500	326.543	.697	.951
Taking in to consideration the organizational culture, market conditions and currency exchange rate for planning	71.0000	328.696	.751	.950
Having cost management plan, quality management plan and scope baseline for this estimation.	71.1667	325.797	.841	.949
Using Lessons learned register, project schedule, resource requirements and risk register for estimation.	71.7083	319.172	.808	.949
Using market conditions published commercial information, exchange rates and inflation for estimation.	71.5833	327.471	.711	.951
Using cost estimating policies, estimating templates, historical information and lessons learned repository for estimation	71.7917	345.563	.411	.954
Poor Work Breakdown Structure definitions	71.7500	322.717	.798	.950
Using Inaccurate cost Estimation for budgeting	71.7917	325.998	.800	.950
Lack of experience in Cost Budgeting	71.6250	340.505	.554	.953
Using inadequacy of the details of cost related items in the agreement for budgeting	71.7917	335.042	.738	.951

Not updating budget after variation of changes	71.7500	331.239	.670	.951
Allowance of numerous variations during project implementation	71.1250	349.418	.376	.954
Change in schedule and construction methods for cost controlling	71.4167	337.558	.638	.952
Week monitoring and reporting methods	71.5000	330.000	.709	.951
Having conflict between project participants for cost controlling	71.8333	329.710	.645	.952
Lack of proper training and experience in Cost Controlling vicinity	71.7917	334.694	.508	.954
Project efficiency	71.0833	322.601	.829	.949
Project effectiveness	71.0833	327.297	.792	.950
Project cost overrun	71.0417	335.955	.721	.951
Project contract conditions	71.2500	338.717	.587	.952