



ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE
GRADUATE STUDIES PROGRAM
DEPARTMENT OF PROJECT MANAGEMENT

The Impact of Project Cost Management on the Overall Success of Project Management: The Case of HEINEKEN Brewery Share Company

BY: SOLOMON BERHANU

ADVISOR: DR. MESFIN WORKINEH

A Project Work Submitted to Addis Ababa University, College of Business and Economics, School of Commerce, in the partial fulfillment of the requirements for the Degree of Master of Arts in Project Management

JUNE, 2017

ADDIS ABABA

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**“THE IMPACT OF PROJECT COST MANAGEMENT ON THE OVERALL
SUCCESS OF PROJECT MANAGEMENT: THE CASE OF HEINEKEN
BREWERY SHARE COMPANY”**

By: Solomon Berhanu

Approved by a Board of Examiners and Advisor:

Dr. Mesfin Workineh

Advisor

Signature

Date

Internal Examiner

Signature

Date

External Examiner

Signature

Date

Statement of Declaration

I, Solomon Berhanu declare that this project work is a result of my independent research work on the topic entitled “**The Impact of Project Cost Management on the overall Success of Project Management: The Case of HEINEKEN Brewery Share Company**”. In partial fulfillment of the requirements for **the Degree of Masters of Art in project Management at Addis Ababa University**. This work has not been submitted for a degree to any other university. All the references are also duly acknowledged.

Solomon Berhanu

Signature _____

Date _____

Statement of Confirmation

This is to certify that **Solomon Berhanu** has carried out this research work on the topic entitled **“The Impact of Project Cost Management on the overall Success of Project Management: The Case of HEINEKEN Brewery Share Company”** under my supervision. This work is original in nature and has not been presented for a degree in any University and it can be submitted for the partial fulfillment of the requirements for the award of the degree of Masters of Art in Project Management.

Dr. Mesfin Workineh

Signature _____

Date _____

Acronyms

HBSC: HEINEKEN Breweries Share Company

IBM SPSS: International Business Machines Statistical Package for the Social Sciences

PMBOK: Project Management Body of Knowledge

PM4DEV: Project Management for Development Organizations

PMI: Project Management Institute

SMT: Senior Management Team

WPS: Work Breakdown Structure

Abstract

Project is a series of activities aimed at bringing about clearly specified objectives within a defined time and with a defined budget. To say one project is successful, the project must be done as per agreed quality, completed within approved time and most importantly completed within approved budget (cost). Furthermore, Project Cost (Budget) Management is one of the three main points that affects the project success or failure. The successful project manager needs to give his attention to managing project cost. Because it is not possible to be successful for a project manager without managing the project cost properly. Therefore the main objective of this project work is to evaluate the Impact of Project Cost Management on the Overall Success of Project Management: in the Case of HEINEKEN Brewery Share Company Kilinto Phase 2 Project. The researcher employed a quantitative approach to investigate the problem under study. The data were collected from project personnel in HEINEKEN Brewery Share Company Kilinto Phase 2 Project. The collected data were analyzed by using IBM SPSS statistics 20. The results indicate that, the project cost management components implemented in HEINEKEN Brewery Share Company Kilinto Phase 2 Project include resource-planning, Cost estimating, cost budgeting and cost control SCM practices. And the regression analysis revealed that project cost management has an impact on the overall success of the project management in HEINEKEN Brewery Share Company Kilinto Phase 2 Project, since all of those components of project cost management have significant association with the dependent variable overall success of the project.

Key Words: *Project; Project Management; Project cost management, Overall success of project*

Acknowledgement

I would like to express my deepest gratitude to my Advisor Dr. Mesfin Workineh for his dedication, advices and technical supports to prepare this project work. I would also like to broaden my thanks to Addis Ababa University School of Commerce for giving me the chance to conduct this project work and to continue my education for MA degree in project management. Moreover my thank also gone to all peoples who are giving the required data for this project work; specially to those personnel's of HEINEKEN Brewery Share Company Kilinto Phase 2 Project.

Above all, I would like to thank my GOD, who has provided me guidance and support in all my life endeavors.

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CHAPTER ONE

INTRODUCTION

1.1. Background of the Project Work

Background of Subject:

Project is a series of activities aimed at bringing about clearly specified objectives within a defined time period and with a defined budget. To say one project is successful, the project must be done as per agreed quality, completed within approved time and most importantly completed within approved budget (PMI, 1999).

Project cost management includes the processes required to ensure that the project is completed within an approved budget. Project Cost Management is defined in the PMI (1999) as "the processes involved in planning, estimating, budgeting, and controlling costs so that the project can be completed within the approved budget." A holistic approach to managing project costs is later identified in the PMBOK as life-cycle costing. This is an approach that focuses not only on the elements needed to have project resources complete scheduled tasks but overall project decisions made that may affect costs as well. This paper evaluates tools and techniques from the perspective of life-cycle costing (PMI, 1999).

The Project Cost Control Tools & Techniques elements adapted from the PMBOK are Estimating, Budgeting, and Controlling. Cost Estimating is developing estimates and measurement for the costs needed for a resource to complete the project tasks and activities. Cost Budgeting is collecting the cost estimates, combining them to develop an overall cost and baseline. Cost Controlling is managing and controlling factors that change or affect the budget (PMI, 1999).

The fundamental role of a project manager is to meet the cost, time, performance and quality goals of the project. In a recent Standish group report IT projects continue to struggle, with only 29 percent completed on time, 18 percent failed or terminated, and 53 percent behind schedule and over budget. As per Johnson & et al (2006), Effective Cost Management is essential to effective Project Management. "Increasingly keen competition and the demand for shorter times to market are driving innovative approaches within the product creation process...key opportunities for future improvements originate in initiatives that span both the process and technology environments." (Layer & et al 2002). It could be argued that the probability of greater success is quite low without the proper tools in place to control costs.

My Project Work is to evaluate the Impact of Project Cost Management on the overall Success of Project Management: The Case of HEINEKEN Brewery Share Company Kilinto Phase 2 Project.

Background of Company:

As per the HEINEKEN Supply Chain (2015), HEINEKEN Breweries Share Company (HBSC) has three breweries in Ethiopia. Bedele and Harar were acquired in 2011 and Kilinto Greenfield near Addis Ababa was recently completed.

At the start-up of Kilinto Greenfield (Phase 1) introduced new Walia Brand is selling far more than expected. Consequently, latest sales forecast sales show that Kilinto Brewery will reach the full technical capacity in 2015. Therefore, HEINEKEN has decided to invest in extending Kilinto Brewery to secure 2016 onwards sales volumes of HBSC in Ethiopia (HEINEKEN Supply Chain, (2015).

Extension of the brewery capacity with 1.5 million hl per year (final brewery technical capacity becomes 3.0 million hl per year (total sales capacity about 2.6 million hl per year). (HEINEKEN Supply Chain, (2015).

To fulfil the more year's beer requirements the brewery capacity will be realized in two additional phases (Phase 1 was Greenfield):

Phase 2: Extension technical brewery capacity of 1.5 million hl per year (sales capacity about 1.3 million hl per year).

Phase 3: Extension technical brewery capacity with another 1.5 million hl per year. The final brewery technical capacity will be 4.5 million hl per year (the total sales capacity will be about 4.0 million hl per year) (HEINEKEN Supply Chain, (2015)).

Thus, this project work is emphasized and get learning from its successful completion of Kilinto phase two in the project cost management. Moreover, this project work is to evaluate the impact of project cost management on the overall success of project management.

1.2. Statement of the Problem

The Success or failure of a Project Management can be evaluated in terms of, how is the quality of the project? Is the project completed with agreed time? Is the project completed within approved budget? In each of Quality, time and budget there are different points and issues that affect the success or failure of it. Moreover, to be successful at overall project management there should balance between managing cost, time and quality (PMI, 1999).

The lack of a cost management system can affect profits and business processes of the projects and implementing appropriate cost control help us to improve the project success (Mario and Amanda, 2016). As a result, managing the project cost will affect project success or failure.

As per Aftab & et al (2012), Time and cost performance is the fundamental criteria for success of any project. This shows that cost management is one of the basic criteria for project success.

As per PMI, (1999), Project Cost (Budget) Management is one of the three main points that affects the project success or failure. The successful project manager needs to give his attention

to managing project cost. Because it is not possible to be successful for a project manager without managing the project cost properly.

Project Cost Management is defined in the PMBOK as "the processes involved in planning, estimating, budgeting, and controlling costs so that the project can be completed within the approved budget. Thus, this project work tries to evaluate the success of the project cost management & its impact on the overall success of the project management. The project work tries to answer the research questions below.

1.3. Research Questions

This project work tries to answer the following general and specific research questions

1.3.1. General Research Question

What is the impact Project Cost Management on the Overall Success of Project Management?

1.3.2. Specific Research Questions

The Specific research questions are as follows:

- What kinds of techniques are implemented for Planning in Project Cost Management?
- What kinds of techniques are implemented for estimating costs in Project Cost Management?
- What kinds of techniques are implemented for Budgeting costs in Project Cost Management?
- What kinds of techniques are implemented for controlling costs in Project Cost Management?
- What is the impact of Project Cost Management on the overall Success of Project Management?

1.4. Objective of the Research

In the below we can find the general and specific objective of this project work.

1.4.1. General Objective

The general objective is to evaluate the Impact of Project Cost Management on the Overall Success of Project Management.

1.4.2. Specific Objectives

The Specific Objectives of the research are described in the below:

- ✚ To evaluate the implemented techniques for Planning the Project Cost Management.
- ✚ To find out the implemented techniques for Estimating the Project Cost Management.
- ✚ To identify the implemented techniques for Budgeting the Project Cost Management.
- ✚ To explore the implemented techniques for Controlling the Project Cost Management.
- ✚ To assess the impact of the Project Cost Management on the overall success of Project Management.

1.5. Scope of the Project Work

This project work is a case study on the impact of Project Cost Management on the Overall Success of Project Management: The Case of HEINEKEN Brewery Share Company Kilinto Phase 2 Project.

The Project Cost Management will be analyzed & focused in its process of Planning, Estimating, Budgeting, and Controlling. Other factors which affect Project Cost Management will be out of the scope of this project work. Moreover, those factors that affect the success of overall project management like time & quality also are not part of this project work.

During this project work preparation, I used primary data, secondary data & different reports.

Despite the above facts, this project will accomplish its objectives.

1.6. Limitation of the Project Work

In this project work, simple random sampling was used. During sample selection it may ignore some relevant sample. But, during preparation of target population attention was given to include relevant group. Moreover, the project work is a case study in HBSC Kilinto phase II project and the result may not show the result of all projects. But, it can be used to us as a comparison for similar project papers.

1.7. Significance of the Project Work

This case study in Project Cost Management practice on HBSC Kilinto Phase 2 Project enables to see its strength and weaknesses in overall Project Management Success. This project Work has the following significances:

- ✚ This Project Work can show the Successful practical implementation of Project Cost Management for those interested decision makers, project managers, shareholders, project team members.
- ✚ The result of this Project Work will also useful for interested researchers for doing their future research in depth of similar title.
- ✚ The Project Work recommendations can help for the project shareholders, project manager & his team for the better achievements & improvements in their future work.

1.8. Organization of the Project Work

This Project Work will be organized in five Chapters. Chapter One deal with the Introduction of research which is consists of Background of the Project Work, Statement of the Problem, Research Questions (which also consists of General and Specific Research Question), Objective of the Research (which also consists of General and Specific Research Objective), Scope of the Project Work, Limitation of the Project Work, Significance of the Project Work and Organization of the Project Work. Chapter two is discussing the literature review related to the study. In the third chapter, the research methodology of the study will be incorporated. Chapter four will focus on data presentation. Finally, in Chapter 5 there will be conclusion and recommendations.

1.9. Operational Definition of Key Terms

Operational definition as per PMBOK for Key terms in this Project Work is expressed as follows:

Project Cost Management

Project cost management includes the processes required to ensure that the project is completed within an approved budget. More specifically, it includes the processes involved in estimating, budgeting, and controlling costs so that the project can be completed within the approved budget. Project managers must make sure their projects are well defined, have accurate time and cost estimates and have a realistic budget that they were involved in approving. Costs are usually measured in monetary units like dollars.

As the definition above indicates project cost knowledge area includes processes involved in estimating, budgeting, and controlling costs. It is primarily concerned with resource costs of schedule activities. A broader view of project cost management is often referred to as **life-cycle costing**. Life cycle costing (LCC) is the process of attaching costs to individual lifecycle stages of the project. Life cycle costing involves acquisition, operating, and disposal costs when evaluating various project alternatives. LCC is therefore concerned with the overall life cycle of the project

Project Management

Project management is the planning, organizing, directing, and controlling of company resources for a relatively short-term objective that has been established to complete specific goals and objectives with in within allocated time, approved budget cost and with agreed & acceptable quality.

Success of Project Management

Twenty years ago, project success was defined as the completion of an activity within the constraints of time, cost, and performance. Today, the definition of project success has been modified to include completion: within the allocated time period, within the budgeted cost, at the proper performance or specification level, with acceptance by the customer/user, with minimum or mutually agreed upon scope changes, without disturbing the main work flow of the organization, without changing the corporate culture.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2. Introduction

This chapter presents the related literatures on the study so as to have an insight in to the research topic and briefly expose the readers to some of the major areas of the subject matter under consideration. The chapter is presented under the following sections.

2.1. Theoretical Literature Review

2.1.1. Project Management

As per PMI (1999), Project management is the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project. Meeting or exceeding stakeholder needs and expectations invariably involves balancing competing demands among; Scope, time, cost, and quality.

The term project management is sometimes used to describe an organizational approach to the management of ongoing operations. This approach, more properly called management by projects, treats many aspects of ongoing operations as projects in order to apply project management to them. Although an understanding of project management is obviously critical to an organization that is managing by projects, a detailed discussion of the approach itself is outside the scope of this document PMI (1999).

2.1.2. Project Cost Management

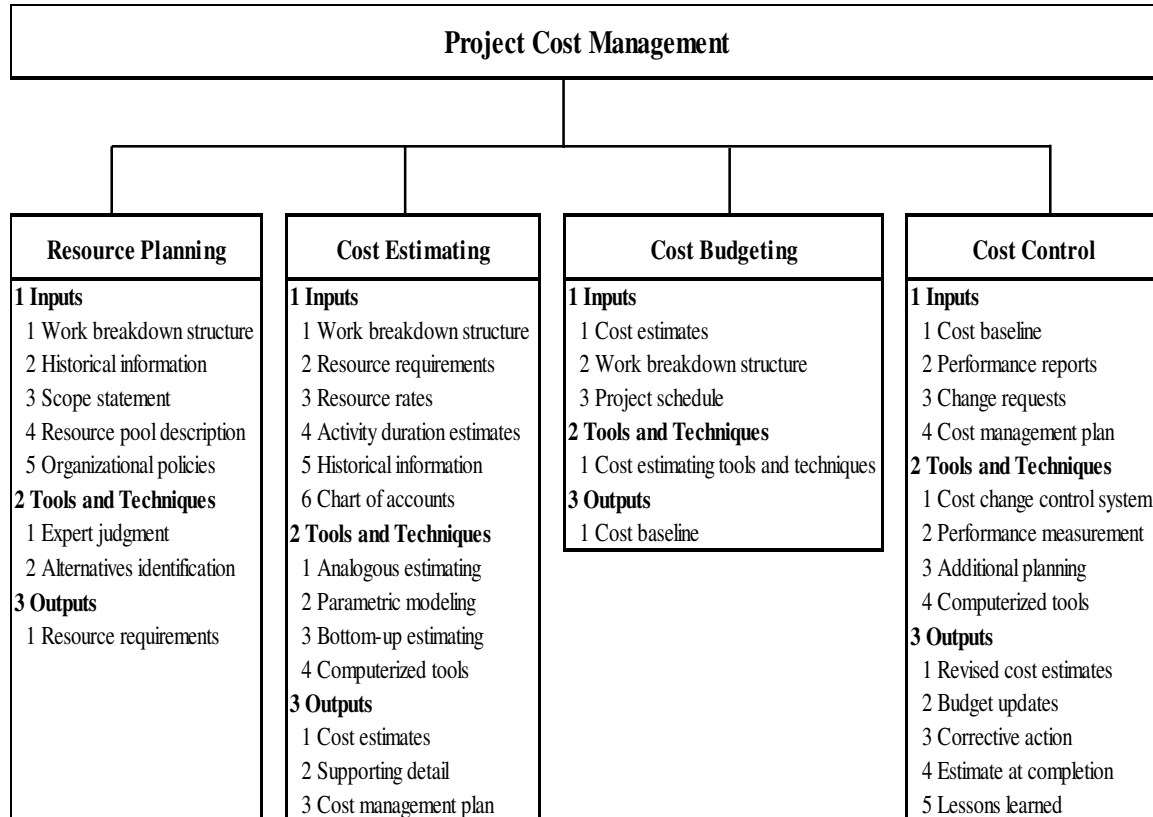
As per described in PMI (1996), Project Cost Management includes the processes required to ensure that the project is completed within the approved budget. Project Cost Management have four components:

- ✓ Resource Planning: determining what resources (people, equipment, materials) and what quantities of each should be used to perform project activities.
- ✓ Cost Estimating: developing an approximation (estimate) of the costs of the resources needed to complete project activities.
- ✓ Cost Budgeting: allocating the overall cost estimate to individual work items.
- ✓ Cost Control: controlling changes to the project budget.

These processes interact with each other and with the processes in the other knowledge areas as well. Each process may involve effort from one or more individuals or groups of individuals based on the needs of the project. Each process generally occurs at least once in every project phase. Although the processes are presented here as discrete elements with well-defined interfaces, in practice they may overlap and interact in ways not detailed here. Project cost management is primarily concerned with the cost of the resources needed to complete project activities. However, project cost management should also consider the effect of project decisions on the cost of using the project product. For example, limiting the number of design reviews may reduce the cost of the project at the expense of an increase in the customer's operating costs. This broader view of project cost management is often called life-cycle costing. In many application areas predicting and analyzing the prospective financial performance of the project product is done outside the project. In others (e.g., capital facilities projects), project cost management also includes this work. When such predictions and analysis are included, project cost management will include additional processes and numerous general management techniques such as return on investment, discounted cash flow, payback analysis, and others. Project cost management should consider the information needs of the project stakeholders—different stakeholders may measure project costs in different ways and at different times. For example, the cost of a procurement item may be measured when committed, ordered, delivered, incurred, or recorded for accounting purposes. When project costs are used as a component of

a reward and recognition system, controllable and uncontrollable costs should be estimated and budgeted separately to ensure that rewards reflect actual performance (PMI, 1999).

The Project Cost Management Overview



Source: Project Management Body of Knowledge (PMI, 1999)

The above project management overview shows four of its components namely Resource planning, cost estimating, cost budgeting and cost control; their inputs to process the activities, the tools and techniques used during the period and the final outputs of the activities.

As per the above table from PMI (1999) in puts from resource planning, cost estimating, cost budgeting and cost control will be defined as follows:

- ✓ **Work breakdown structure:** the work breakdown structure (WBS) identifies the project elements that will need resources and thus is the primary input to resource planning.

- ✓ **Historical information:** Historical information regarding what types of resources were required for similar work on previous projects should be used if available.
- ✓ **Scope statement:** the scope statement contains the project justification and the project objectives, both of which should be considered explicitly during resource planning.
- ✓ **Resource pool description:** Knowledge of what resources (people, equipment, and material) are potentially available is necessary for resource planning.
- ✓ **Organizational policies:** the policies of the performing organization regarding staffing and the rental or purchase of supplies and equipment must be considered during resource planning.
- ✓ **Resource requirements:** the output of the resource planning process is a description of what types of resources are required and in what quantities for each element of the work breakdown structure.
- ✓ **Resource rates:** The individual or group preparing the estimates must know the unit rates for each resource in order to calculate project costs.
- ✓ **Activity duration estimates:** will affect cost estimates on any project where the project budget includes an allowance for the cost of financing.
- ✓ **Historical information:** Information on the cost of many categories of resources.
- ✓ **Chart of accounts:** A chart of accounts describes the coding structure used by the performing organization to report financial information in its general ledger.
- ✓ **Project schedule:** The project schedule includes planned start and expected finish dates for the project elements that costs will be allocated to.
- ✓ **Performance reports:** Performance reports provide information on cost performance such as which budgets have been met and which have not.
- ✓ **Change requests:** Change requests may occur in many forms—oral or written, direct or indirect, externally or internally initiated, and legally mandated or optional.

Tools and Techniques resource for planning, cost estimating, cost budgeting and cost control as per PMI (1999) will be defined as follows:

- ✓ **Expert judgment:** Expert judgment will often be required to assess the inputs to this process. Such expertise may be provided by any group or individual with specialized knowledge or training.
- ✓ **Alternatives identification:** this is a catchall term for any technique used to generate different approaches to the project.
- ✓ **Analogous estimating:** Analogous estimating, also called top-down estimating, means using the actual cost of a previous, similar project as the basis for estimating the cost of the current project.
- ✓ **Parametric modeling:** Parametric modeling involves using project characteristics (parameters) in a mathematical model to predict project costs.
- ✓ **Bottom-up estimating:** This technique involves estimating the cost of individual work items, then summarizing or rolling-up the individual estimates to get a project total.
- ✓ **Cost change control system:** A cost change control system defines the procedures by which the cost baseline may be changed.
- ✓ **Performance measurement:** Performance measurement techniques, help to assess the magnitude of any variations which do occur.
- ✓ **Additional planning:** Few projects run exactly according to plan. Prospective changes may require new or revised cost estimates or analysis of alternative approaches.
- ✓ **Computerized tools:** Computerized tools such as project management software and spreadsheets are often used to track planned costs vs. actual costs, and to forecast the effects of cost changes.

Outputs for planning, cost estimating, cost budgeting and cost control as per PMI (1999) will be defined as follows:

- ✓ **Resource requirements:** the output of the resource planning process is a description of what types of resources are required and in what quantities for each element of the work breakdown structure.
- ✓ **Cost estimates:** Cost estimates are quantitative assessments of the likely costs of the resources required to complete project activities. They may be presented in summary or in detail. Costs must be estimated for all resources that will be charged to the project.
- ✓ **Cost management plan:** The cost management plan describes how cost variances will be managed. A cost management plan may be formal or informal, highly detailed or broadly framed based on the needs of the project stakeholders.
- ✓ **Cost baseline:** The cost baseline is a time-phased budget that will be used to measure and monitor cost performance on the project.
- ✓ **Revised cost estimates:** Revised cost estimates are modifications to the cost information used to manage the project.
- ✓ **Budget updates:** Budget updates are a special category of revised cost estimates. Budget updates are changes to an approved cost baseline. These numbers are generally revised only in response to scope changes. In some cases, cost variances may be so severe that “rebase lining” is needed in order to provide a realistic measure of performance.
- ✓ **Corrective action:** Corrective action is anything done to bring expected future project performance into line with the project plan.
- ✓ **Estimate at completion:** An estimate at completion (EAC) is a forecast of total project costs based on project performance.
- ✓ **Lessons learned:** The causes of variances, the reasoning behind the corrective action chosen, and other types of lessons learned from cost control should be documented so that

they become part of the historical database for both this project and other projects of the performing organization.

As per Hanid et al. (2011), effective cost management is important for the achievement of the investment put forward by the sponsor of the project. Therefore, in order to provide accurate guidance to the decision maker in initiating and making their decision, consideration of value, achievement of maximal accuracy and reduction in cost are very important to be achieved in every cost estimation exercise.

As per Doloi (2013), the subject of poor cost performance has been widely published in the mainstream project and construction management literature. Nevertheless, the underlying responsibilities of the key stakeholders (clients, consultants, and contractors) in managing this chronic problem in the Australian construction industry remain unclear. By performing an in-depth analysis of the roles and responsibilities of these key stakeholders, this research is intended to unfold the industrywide perception of cost performance being heavily reliant on the contractor's performance alone. Based on a thorough literature review and relevant industry inputs, 73 attributes associated with cost performance were identified for investigation. Based on the relative importance weighing technique on 48 selected attributes, planning and scheduling deficiencies have the highest impact on cost performance from clients, consultants, and contractors' perspectives. Confirmatory factor analysis on the combined responses across all three groups suggests that robust control procedures and adequate programming, along with efficient design and effective site management, are the most critical factors. These factors are primarily associated with the responsibilities of contractors and consultants for managing cost overruns in projects. However, the client's responsibility in facilitating effective management of these factors within the project environment is crucial. Multivariate regression analysis

performed on eight factors' scores highlighted the influence of five significant factors ($p < 5\%$) on managing cost overruns.

As per PM4DEV (2015), a project budget is the total sum of money allocated for the particular purpose of the project for a specific period of time. The goal of budget management is to control project costs within the approved budget and deliver the expected project goals. Our definition of a successful project is one that meets four success criteria: that the project's scope is delivered on schedule, it is delivered within budget and, once delivered, it meets the quality expectations of the donor and the beneficiaries. For project managers to be truly successful they must concentrate on meeting all of those criteria. The reality is that most project managers spend most of their efforts on completing the project on schedule. They spend most of their time on managing and controlling the schedule and tend to forget about monitoring and controlling the budget.

Project Budgeting is performed on the initial stages of project planning and usually in parallel with the development of the project schedule. The steps associated with budgeting are highly dependent to both the estimated lengths of tasks and the resources assigned to the project. Budgeting serves as a control mechanism where actual costs can be compared with and measured against the budget. The budget is often a fairly set parameter in the execution of the project. When a schedule begins to slip, cost is proportionally affected. When project costs begin to escalate, the project manager should revisit the Project Plan to determine whether the scope, budget, or schedule needs adjusting. To develop the budget, the applicable cost factors associated with project tasks are identified. The development of costs for each task should be simple and direct and consist of labor, material, and other direct costs. The cost of performing a task is directly related to the personnel assigned to the task, the duration of the task, and the cost of any non-labor items required by the task. (PM4DEV, 2015).

2.1.3. Project Cost Management and Success Criteria of Project Management

Project Management is the application of a collection of tools and techniques to direct the use of diverse resources toward the accomplishment of a unique, complex, one-time task within time, cost and quality constraints. Each task requires a particular mix of these tools and techniques structured to the task environment and life cycle (from conception to completion) of the task (PMI, 1999).

According to PMI (1999), the project management success criteria can be described in iron triangle. The iron triangle consist of cost, time and quality. This shows that project management success is determined by those three iron triangle elements. Thus, to be successful or say the project management is in success, the below are the criteria:

- The project should be finished on agreed time.
- The project cost should be finalized within approved cost or budget.
- The project quality is as per the agreed criteria.

Thus, this project work is tried to see in depth one of the iron triangle, cost. Moreover, it tried to see how the project cost management is effective in all the four stages planning, estimating, budgeting and controlling. This project work is a case study HEINEKEN Share Company Kilinto phase II project.

2.2. Empirical Literature Review

In this section previous studies related to this project work will be reviewed.

As per Roger (1999), in his previous study “Project management: cost, time and quality, two best guesses and a phenomenon, it’s time to accept other success criteria” identified that “Cost, time and quality (The Iron Triangle), over the last 50 years have become inextricably linked with measuring the success of project management. This is perhaps not surprising, since over the same period those criteria are usually included in the description of project management. Time and costs are at best, only guesses, calculated at a time when least is 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 can be assessed? This paper proposes a new framework to consider success criteria.” This paper agreed that project cost management and project success have direct relationship.

In their study “Effect of Project Management on Project Success”; Akewushola, Olateju and Hammed (2012) identified that, the research findings reveal that there is a relationship between project quality and business success, Project quality and technical success. The study also reveals that there is a significant relationship between Project cost and acceptability by clients. It was therefore recommended among others that total project cost on the side of clients should be minimized by ensuring that the project manager is innovative enough and creative in the apportion of project cost without reducing the quality of the project. In this study also project cost management and project success have direct relationship.

Aftab & et al (2012), in the research work entitled “Time and Cost Performance in Construction Projects in Southern and Central Regions of Peninsular Malaysia” identified that, time and cost performance is the fundamental criteria for success of any project. Unfortunately construction

industry in Malaysia has been regarded as industry facing poor performance leading to failure in achieving effective time and cost performance. As a consequence most of the project face huge amount of time and cost overrun. The study assessed the time and cost performance of construction projects in Malaysia using structured questionnaire survey. The findings of study revealed that 92% of construction projects were overrun and only 8% of project could achieve completion within contract duration. The amount of time overrun was in between 5-10% as agreed by respondents. In terms of cost performance only 11% of respondents mentioned that normally their projects are finished within the budgeted cost while 89% of respondents agreed that their projects were facing the problem of cost overrun with average overrun at 5-10% of contract price. The major contributors of this poor performance include design and documentation issues, financial resource management and project management and contract administration issues. Further, qualitative study was carried out using semi-structured interviews with the experience personnel involving in managing construction project which resulted in developing 13 mitigation measure to improve time performance and 15 mitigation measure to improve cost performance in construction project. The study will help the practitioners to implement the mitigation measure at planning stage in order to achieve successful construction projects.

2.3. Conceptual Framework

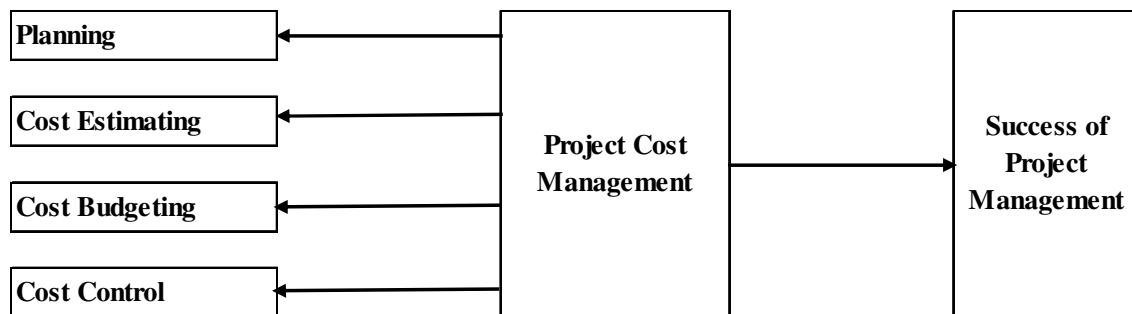
According to PMI (1999), Project management success can be affected by time, quality and cost. Those three success criteria named as Iron triangle. This means the project success can be affected by the Project cost management, Project quality management and Project time management.

From the Iron triangle that will affected the project success, this project work tries to see the project cost management.

According to PMI (1999), Project cost management is the process involved in planning, estimating, budgeting and controlling costs so that the project can be completed within the approved budget.

From the above definition, we can understand that the project cost management includes planning, estimating, budgeting and controlling. According to PMI (1999) each process of project cost management have Input, output and outcomes. Thus, this project work tries to evaluate the planning, estimating, budgeting and controlling processes in relation to their input, output and outcomes. Moreover, it also tries to evaluate the impact of project cost management on the project success.

Based on the above literature review the below conceptual frame work is developed.



Source: Developed by the researcher based from the above theory.

Based on the above conceptual frame work, the following hypotheses are presented:

On the Success of Project Management, the main process in Project Cost Management listed below have positive impact:

- ✓ Planning
- ✓ Estimating
- ✓ Budgeting
- ✓ Controlling.

2.4. Discussion

This chapter tried to define project management and its success criteria. Moreover, it defined the project cost management along with its process components planning, estimating, budgeting and controlling. It also identified their important inputs, tools and techniques and outputs.

In the Empirical Study I tried to examine and evaluate the previous studies. Most of the study shows the project cost management and project success have direct relationship. Finally, I put the conceptual frame work of the study.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter will try to explain the research design, the location of the project, data type and source (which includes population and Sampling procedure), data collection procedure, data analysis, content of Validity and Reliability, Ethical Confidential Documentation and Personal Interest.

3.1. Project Location

Kilinto Phase II Project is located near a small village named “Kilinto” about 20 KM away from the center of Addis Ababa in south Ethiopia side. This is close to the main market of Addis Ababa.

3.2. Research Design

According to Creswell (2009), Research designs are plans and the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. In this project work, descriptive research approach and quantitative research design is used. As per Kothari (1990), descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual, or of a group. This research approach enables the researcher to evaluate the impact of project cost management on the success of project management assess. Moreover, this design is selected in order to collect enough information for this project work. According to Best and Kahn (2006), Quantitative method can describe events and persons scientifically with the use of numerical data. Thus, to make the descriptive approach more reliable in this project work quantitative research design is used.

3.3. Data Type & Source

This project work uses primary data, secondary data, and various reports of the project.

3.3.1. Population

During this project work preparation, from the total population the target group is identified and selected accordingly. In this expansion project, 136 professionals are involved. Those includes in project manager & his team (Engineers, Finance & Purchasing), in the subcontractors project management team.

3.3.2. Sampling Procedure

From the total population the researcher were selected data by using a simple random sampling technique and to determine the sample size for selecting respondents in this project work the researcher were employed a sample determination formula developed by Cochran in 1963.

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where n_0 is the sample size, Z^2 is the abscissa of the normal curve that cuts off an area α at the tails $(1 - \alpha)$ equals the desired confidence level, e is the desired level of precision, p is the estimated proportion of an attribute that is present in the population, and q is $1-p$. Therefore in this research

$$n_0 = 1.96^2 * \frac{(0.5)*(0.5)}{(0.05)^2} = 384.16 \sim 385$$

$$(0.05)^2$$

Since the population is small then the sample size can be reduced slightly. This is because a given sample size provides proportionately more information for a small population than for a large population. The sample size (n_0) can be adjusted using the following formula.

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Therefore $\hat{n} = 385 / (1 + ((385-1)/136)) = 100.69 \sim \underline{\underline{101}}$

Therefore, the total sample for this study is 101.

3.4. Data Collection Procedure

In this project work both primary and secondary data including various reports of the project is used. The major sources of data in this study were the primary data collected from those project personnel by using the pre-designed questioner. This data also supplemented by the secondary data we get from various sources like policies, project data book, minutes of meetings, published & unpublished documents, articles and various relevant reports of the projects. In order to identify respondents from the total 136 population the researcher uses the online-generated random numbers from a website <http://www.psychicscience.org/random.aspx>. Here the researcher first give a sequential number from 1 to 136 for all personnel in this project and then as per the random number generated from the above website the researcher selects the respondents from those list of employees. The primary data collected from respondents by giving a self-administered questioner.

3.5. Data Analysis Procedure

The data collected from primary source of questionnaire was analyzed using descriptive statistics of SPSS software version 20. To present the analysis result the researcher employed frequency, percentage, tables and charts. Moreover, the data collected by primary source was analyzed by combining and summarizing the results.

3.6. Content Validity & Reliability

According to (Creswell, 2009), employing multiple data collection instruments help the researcher to combine strengthen and amend some of the inadequacies and for triangulation of the data. Accordingly, in this project work the data obtained from primary & secondary data was used and analyzed to increase the triangulation of the data process is implemented and result is analyzed and conclusion is drive from it.

3.7. Ethical Confidential Document & Personal Interest

In this project work preparation, the ethical confidential documentation was implemented & taken in to account during the overall process. All the documents used during the preparation of this project work will only be used for the accomplishment of this paper. Moreover, there is no personal interest and the project worker will act professionally.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

4.1. Introduction

This chapter presents the project work findings, analysis of the data and interpretation of the data collected from the respondents. It also presents findings and the discussion about the impact of project cost management on the overall success of project management in the case of HEINEKEN brewery share company Kilinto Phase 2 Project. From the collected data in this chapter the researcher, present the analysis result in form of tables and figures and qualitative analysis in prose.

4.2. Response rate of respondents

A total of 101 questionnaires administered to various project staffs in HEINEKEN brewery share company Kilinto Phase 2 Project, out of which 86 questioners completely filled and returned. The remaining 15 questioners were not collected due to refusal to give response for the questionnaires. This gave a response rate of 85.15% According to Mugenda & Mugenda (2003) the statistically significant response rate for analysis should be at least 50%.

Table 4.1: Response Rate of respondents

Status	No of Questioner	Response rate (%)
Completed	86	85.15%
Not Completed	15	14.85%
Total	101	100%

Source: Research data (2017)

4.3. Assessing reliability

In this project, work the reliabilities of project cost management and the overall success of project management were assessed with Cronbach's Alpha. Table 4.2, report means, standard deviations, correlations, and reliability values for each of constructs. The reliability values for all constructs are all greater than .70, which are considered acceptable.

Table 4.2: Reliability Statistics

	<i>Scale Mean if Item Deleted</i>	<i>Scale Variance if Item Deleted</i>	<i>Corrected Item-Total Correlation</i>	<i>Cronbach's Alpha if Item Deleted</i>
The company examines the resource requirement (people, equipment and materials) for each of the project elements separately	46.4186	50.999	.788	.794
The company maintains separate chart of accounts for resources in different project elements	46.7093	57.620	.365	.837
The company follows up whether the actual resources used in project elements are in accordance with that proposed on the project book	46.0581	63.067	.474	.825
The company takes immediate action in case of discrepancy b/n the actual resources used and the proposed resource requirement	46.4186	50.999	.788	.794
The company maintains separate chart of accounts for each of the resources	45.9884	66.482	.221	.836
The company maintains separate chart of accounts for resources in different project elements	47.4070	62.244	.232	.843
The company prepares a budget book that consist of the resource requirement in quantity and in cost based on the proposed project book	46.0581	63.067	.474	.825
The budget book contains a detailed information regarding the quantity & cost of the resources in each project elements by using their distinct account numbers maintained in the chart of accounts	46.4186	50.999	.788	.794
The company prepares regular and timely variance analysis based on performance reports to see whether the quantity and cost of the resources used vary from that in the budget book	46.4186	50.999	.788	.794

	<i>Scale Mean if Item Deleted</i>	<i>Scale Variance if Item Deleted</i>	<i>Corrected Item-Total Correlation</i>	<i>Cronbach's Alpha if Item Deleted</i>
The company takes immediate action in case of variance (in quantity, cost or both) between actual resources used and the resource requirement in the budget book	45.9302	64.677	.195	.840
Project cost management plays a vital role for the overall success of the project management	46.0581	63.067	.474	.825
Beside time & quality management, project cost management is crucial for the success of the entire project.	46.0000	63.835	.498	.826
A project cost management is said to be successful if the project is finalized within the approved budget	46.0698	63.501	.288	.834

4.4. Analysis of results and Interpretation

The responses of participants were further analyzed and interpreted as follows:

4.4.1. Project Cost management

The above table 4.2 is result is classified in to four groups of project cost management; namely Resource planning, Cost estimating, Cost Budgeting & Cost Control and the result is analyzed and interpreted as follows:

Table 4.3: project cost management on in HEINEKEN brewery share company Kilinto

Phase 2 Project.

	N	Mean	Std. Deviation
Resource Planning	86	3.5988	1.16775
Cost Estimating	86	4.1337	.91209
Cost Budgeting	86	3.9244	.84546
Cost Control	86	3.9564	.80091
Valid N (list wise)	86		

From table 4.3 above, the researcher sought to establish the impact of project cost management on the overall success of project management in the case of HEINEKEN brewery share company Kilinto Phase 2 Project and here the respondents instructed to respond to the statements on a 5-point Likert scale and indicate the extent they agree with the statements. I.e. 5-Strongly agree, 4-Agree, 3-Nutral, 2-Disagree, 1-Strongly disagree. A mean (M) score of 0-1.5 means that the respondents strongly disagreed, between 1.50 to 2.50 means they disagreed, 2.50 to 3.50 means the respondents were neutral, 3.50-4.50 means they agreed, and a mean above 4.50 means the respondents strongly agreed. Based on the findings in the above Table 4.3, the project cost management of HEINEKEN brewery share company Kilinto Phase 2 project includes resource planning (M=3.5988, SD=1.16775), Cost Estimating (M=4.1337, SD=0.91209), Cost Budgeting (M=3.9244; SD=0.84546), and Cost control (M=3.9564, SD=0.8009). Therefore, respondents in this project work agreed with the company project cost management since all of those project cost management components had mean scores in the range 3.50-4.50.

Table 4.4: Overall Success of Project Management

	N	Mean	Std. Deviation
Overall Success of Project Management	86	4.1202	.54572
Valid N (list wise)	86		

From table 4.4, the researcher also request respondents on the overall success of a project management in order to see Impact of Project Cost Management on the overall Success of Project Management: The Case of HEINEKEN Brewery Share Company Kilinto Phase 2

Project. Here the respondents also instructed to respond to the statements on a 5 point Likert scale and indicate the extent they agree with the statements that is: 5-Strongly agree, 4-Agree, 3-Neutral, 2-Disagree, 1-Strongly disagree. A mean (M) score of 0-1.5 means that the respondents strongly disagreed, between 1.50 to 2.50 means they disagreed, 2.50 to 3.50 means the respondents were neutral, 3.50-4.50 means they agreed, and a mean above 4.50 means the respondents strongly agreed.

Based on the above findings in Table 4.4, the overall Success of Project Management in the Case of HEINEKEN Brewery Share Company Kilinto Phase 2 Project has a mean =4.1202 with standard Divisions = 0.54572. The overall success of a project management had mean scores in the range 3.5-4.5 i.e. respondent agree on the overall Success of Project Management. This implied that, the overall success of a project management is affected by project cost management process; Resource Planning, Cost Estimating, Cost Budgeting & Cost Control.

4.5. Regression Analysis

The researcher carried out a regression analysis to verify the association between the independent variables with the dependent variable on HEINEKEN Brewery Share Company Kilinto Phase 2 Project

Table 4.5: Regression analysis between dependent Variable (Overall Success of Project Management) and independent variable (Cost Estimating, Cost Budgeting, Cost Control & resource planning).

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.276	.221		5.761	.000
1 Cost Estimating	.471	.045	.788	10.559	.000
Cost Budgeting	.812	.144	1.258	5.639	.000
Cost Control	-.482	.159	-.708	-3.041	.003
Resource Planning	-.106	.047	-.228	-2.283	.025

a. Dependent Variable: Overall Success of Project Management

Table 4.5; shows there is significant association between the independent variables Cost Estimating, Cost Budgeting, Cost Control and Resource Planning with the dependent variable Overall Success of Project Management, in HEINEKEN Brewery Share Company Kilinto Phase 2 Project. Since the p-value for those project cost management components are less than 0.05 and the resulting regression equation is as follows;

$$Y = 1.276 + 0.471X_1 + 0.812X_2 - 0.482X_3 - 0.106X_4 + e$$

Where Y= Overall Success of Project Management,

X₁= Cost Estimating;

X₂ = Cost Budgeting;

X₃ = Cost Control;

X4 = Resource Planning and

e = the residual amount.

The regression equation above show as by considering all factors constant at zero, the overall success of a project management of HEINEKEN Brewery Share Company Kilinto Phase 2 Project will have a value of 1.276. In addition, the findings or the above regression equation show us, by taking all other independent variables at zero, a unit increase in cost estimate and cost budgeting would lead to a 0.471 and 0.812 increase in the overall success of HEINEKEN Brewery Share Company Kilinto Phase 2 Project respectively. Also a unit increase in cost control and resource planning in HEINEKEN Brewery Share Company Kilinto Phase 2 Project taking all other independent variables at zero, would lead to a 0.482 and 0.106 decrease in the overall success of project management.

Table 4.6: Model Summary for Dependent Variable overall success of project management

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.831 ^a	.690	.675	.31120

a. Predictors: (Constant), Resource Planning, Cost Estimating, Cost Budgeting , Cost Control

From table 4.6; R-Square, which is the coefficient of determination, is a commonly used statistic to evaluate model fitness. The adjusted R², also called the coefficient of multiple determination, is the percentage of the variation in the dependent variable explained uniquely or jointly by the independent variables. 67.5% of the variations in the overall success of a project management in HEINEKEN Brewery Share Company Kilinto Phase 2 Project attributed to the combined effect of the predictor variables. This means that 31.12% of the changes attributed by other factors.

Table 4.7: ANOVA Result for the overall success of a project management

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	17.469	4	4.367	45.096	.000 ^b
Residual	7.845	81	.097		
Total	25.314	85			

a. Dependent Variable: Overall Success of Project Management

b. Predictors: (Constant), Resource Planning, Cost Estimating, Cost Budgeting , Cost Control

Table 4.7 above; show the P-value of 0.000 indicates that the regression relationship is significant in predicting how those four independent variables (cost estimate, budget estimate, resource planning and cost control) influence the overall success of a project management. The F critical at 5% level of significance is 3.95. Since F calculated is 45.096 is greater than the F critical (value = 3.95) thus showing that the model is significant.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This project work wanted to explore the impact of project cost management on the overall success of project management in the case of HEINEKEN Brewery Share Company Kilinto Phase 2 Project in Addis Ababa. The researcher give answer for the research questions, what kind of techniques are implemented for Planning, Estimating, Budgeting & Controlling in Project Cost Management? In addition, what is the impact of Project Cost Management on the overall Success of Project Management?

Therefore, this chapter gives the summary, conclusions, recommendations and suggestions for further research based on the results in chapter four.

5.2. Summary of the Finding

The results of the study provide important insights on The Impact of Project Cost Management on the overall Success of Project Management: The Case of HEINEKEN Brewery Share Company Kilinto Phase 2 Project”. The summary of this research finding is as follows

- The reliability values for all constructs are all greater than 0.70, which considered acceptable.
- The project cost management of HEINEKEN brewery share company Kilinto Phase 2 project includes all of those components of project cost management i.e. resource planning (M=3.5988, SD=1.16775), Cost Estimating (M=4.1337, SD=0.91209), Cost Budgeting (M=3.9244; SD=0.84546), and Cost control (M=3.9564, SD=0.8009). Moreover, respondents in this project work agreed with the company project cost management since all of those project cost management components had mean scores in the range 3.50-4.50.

- The overall Success of Kilinto Phase 2 Project Management in HEINEKEN Brewery Share Company has a mean =4.1202 with standard Divisions = 0.54572. This indicates the overall success of a project management had mean scores in the range 3.5-4.5 i.e. respondent agree on the overall Success of Project Management in HEINEKEN phase 2 expansion.
- There is significant association between the independent variables Cost Estimating, Cost Budgeting, Cost Control and Resource Planning with the dependent variable Overall Success of Project Management, in HEINEKEN Brewery Share Company Kilinto Phase 2 Project. Since the p-value for those project cost management components in this project work is less than 0.05.
- From the regression equation, we get in this project work
 - By considering all factors constant at zero, the overall success of a project management of HEINEKEN Brewery Share Company Kilinto Phase 2 Project will have a value of 1.276.
 - By taking all other independent variables at zero, a unit increase in cost estimate and cost budgeting would lead to a 0.471 and 0.812 increase in the overall success of HEINEKEN Brewery Share Company Kilinto Phase 2 Project respectively.
 - Also a unit increase in cost control and resource planning in HEINEKEN Brewery Share Company Kilinto Phase 2 Project taking all other independent variables at zero, would lead to a 0.482 and 0.106 decrease in the overall success of project management.
- From the model summary, we had adjusted R square of 0.675 i.e. 67.5% of the variations in the overall success of a project management in HEINEKEN Brewery

Share Company Kilinto Phase 2 Project attributed to the combined effect of the predictor variables. This means that 31.12% of the changes attributed by other factors.

- The ANOVA result show the P-value of 0.000 indicates that the regression relationship is significant in predicting how those four independent variables (cost estimate, budget estimate, resource planning and cost control) influence the overall success of a project management. The F critical at 5% level of significance is 3.95. Since F calculated is 45.096 is greater than the F critical (value = 3.95) thus showing that the model is significant.

5.3. Conclusion

From the research findings, the project cost management components implemented in HEINEKEN Brewery Share Company Kilinto Phase 2 Project include resource-planning, Cost estimating, cost budgeting and cost control. In addition, from the analysis result we found in resource planning the techniques used are historical information and resource pool description. In cost estimating, the techniques used are chart of account maintaining and cost management plan. In cost budgeting the cost estimating tools and techniques used also employed here i.e. chart of account maintaining and cost management plan and finally in cost control the company uses Cost change control system, Performance measurement, Additional planning and Computerized tools.

When we see the impact of project cost management on the overall success of project management in the case of HEINEKEN Brewery Share Company Kilinto Phase 2 Project, those all components of project cost management i.e. resource planning, cost estimating, cost budget and cost control has a significant association with the overall success of the project management. Moreover, cost estimating and cost of budgeting have a positive association with the overall success of a project management. Whereas, cost control and resource planning have a negative association with overall success of the project management.

5.4. Recommendations

Based on the study results, the researcher give the following recommendations; firstly, those project staffs and senior management teams (SMT) need to focus on project cost management components specifically cost control and resource planning since those components have a negative association with equally the overall success of a project management. But also in the future expansion phase 3, those project manager and his time also give due attention equally for all components of project cost management since they all have impact on the overall success of their project.

5.5. Suggestion for Further Study

The present study used only one factor, which affects the overall success of a project in HEINEKEN Brewery Share Company Kilinto Phase 2 Project; future studies should consider expanding their scope to include two major factors (time and quality) and other related factors which impact the overall success of HEINEKEN Brewery Share Company Kilinto Phase 2 Project. Moreover, further studies related to the impact of project cost management on the overall success of project management in the case of various factories in the brewery and similar industry can-be conducted by basing this project work.

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Annex II: Questioner

Addis Ababa
University
(Since 1950)



ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

GRADUATE STUDIES PROGRAM

DEPARTMENT OF PROJECT MANAGEMENT

QUESTIONNAIRE

Title of the project work: “The Impact of Project Cost Management on the overall Success of Project Management: The Case of HEINEKEN Brewery Share Company”

Dear Sir /Madam,

My name is Solomon Berhanu and I am a student in Addis Ababa University School of Commerce for MA program in Project Management. As part of my MA requirement, I am doing project work entitled: “The Impact of Project Cost Management on the overall Success of Project Management: The Case of HEINEKEN Brewery Share Company Kilinto Phase 2 Project”.

I kindly request you to participate in this project work by completing the attached questionnaire. In order to ensure that all information will remain confidential please do not

include your name anywhere in the questionnaire. I also sincerely request you to respond to the questions as honestly as possible and return the completed questionnaires.

Knowing that your time is valuable please, take few minutes of your time to complete the questionnaire.

In case of any question or please contact me via solomonberhanu19@yahoo.com.

Thank you in advance for your co-operation.

Instructions: Refereeing to a recently completed project (Kilinto II), please answer the following question. Please indicate your level of agreement or disagreement with each of these statements or questions using the given scale by placing[x]in the provided space. Please also answer all the questions to enhance the objectivity of the research.

No	DESCRIPTION OF SCALE	SCALE				
		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	The company examines the resource requirement (people, equipment and materials) for each of the project elements separately					
2	In evaluating the resource requirement for the current project the company uses information from previously completed similar projects					
3	The company follows up whether the actual resources used in project elements are in accordance with that proposed on the project book					
4	The company takes immediate action in case of discrepancy b/n the actual resources used and the proposed resource requirement					

No	DESCRIPTION OF SCALE	SCALE				
		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
5	The company maintains separate chart of accounts for each of the resources					
6	The company maintains separate chart of accounts for resources in different project elements					
7	The company prepares a budget book that consist of the resource requirement in quantity and in cost based on the proposed project book					
8	The budget book contains a detailed information regarding the quantity & cost of the resources in each project elements by using their distinct account numbers maintained in the chart of accounts					
9	The company prepares regular and timely variance analysis based on performance reports to see whether the quantity and cost of the resources used vary from that in the budget book					
10	The company takes immediate action in case of variance (in quantity, cost or both) between actual resources used and the resource requirement in the budget book					
11	Project cost management plays a vital role for the overall success of the project management					
12	Beside time & quality management, project cost management is crucial for the success of the entire project.					
13	A project cost management is said to be successful if the project is finalized within the approved budget					