ADDIS ABABA UNIVERSITY

COLLEGE OF BUISNESS AND ECONOMICS

SCHOOL OF COMMERCE

GRADUATE PROGRAM OF PROJECT MANAGEMENT

ASSESSMENT FACTORS AFFECTING PROJECT PERFORMANCE: A CASE STUDY OF

BISHOFTU TOWN COBBLESTONES CONSTRUCTIONPROJECTS.

PREPARED BY: AKAWAK ENDALE

JUNE, 2020

ADDIS ABABA, ETHIOPIA

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A PROJECT WORK SUBMITTED TO ADDIS ABABA UNIVERSITY,SCHOOL OF COMMERCE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF ARTS DEGREE IN PROJECT MANAGEMENT

June, 2020

Addis Ababa, Ethiopia

Statement of Declaration

I, Akawak Endale the undersigned, declare that this research is my original work and has not been presented for a degree in any other university and that all sources of materials used for this research have been duly acknowledged.

Declared by: Confirmed by Advisor:

Name: _____ Name: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Addis Ababa University

College of Business and Economics

Department of Project Management Approval

This is to certify that this project work prepared by Akawak Endale Assessment factors affect ing project performance: A Case Study of Bishoftu Town Cobblestone Constructionprojects. Which is submitted in partial fulfillment of the requirements for the Degree of Masters in project management (MAPM),complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Abstract

The success and failure of any projects depends on its performance .the road construction sector is one of the key sectors of Ethiopian national economy. Nevertheless, it undergoes through several problems that affect project performance in terms of project performance parameters like time, cost and quality. This study was conducted to identify factors affect project performance in the case of Bishoftu town cobblestone road construction. The main objective of this study is to identify the factor affecting the project performance in the Bishoftu town cobble stone construction projects. The methodology applied is descriptive design along cross sectional method as the study focuses on identifying and describing those factors that affecting the project performance. The sources of the data for the study are primary data and review of the documents. Questionnaires were the main instruments used in this study. The target population size of the study was 89 respondents. This study was undertaken in Bishoftu Town cobblestone road construction projects. The questionnaires were distributed to all target respondents from which 64 filled in and returned. The data used for this study comprises the cobblestone projects started in the last two years from 2010 E.C. the projects reviewed were 10 from the 51 projects that were selected using purposive method. The respondents for this study were contractors, consultant, client and regulators auditors. From both analysis of the primary data and secondary, it was found that there were problems of project performance in the town. The top ten most influential factors that were affecting cobblestone projects performance are awarding of the contract to the lowest bidders, escalation of material price, poor planning and scheduling, clients emphasis on low construction cost, low participation of local community in the project implementation, difficulty in weather condition, excessive bureaucratic condition, poor use of project software, clients emphasis on quick construction instead of quality. Having such kinds of factors, the management would decide to minimize problems to ensure the project objectives. Further study should be conducted in the factors affecting project performance in the construction both in private and public construction sectors using inferential statistics in order to enhance generalizability in the sector.

Key Words: *project quality,project cost overrun, projectdelay, projectmmanagement,cobblestone construction.*

DEDICATION

I wish to dedicate this work to the Almighty God who gave me good health and the ability to do the work and my mother Amina B/Biya and my friends for their understanding, support and advice during my education time.

ACKNOWLEDGEMENTS

Above all, I thank the almighty god , for what he has done to me until today, blessing my life and giving me the patience and strength to finish this work. I am also very grateful to may advisor Dr. Abdurezak Mohammed for his guidance and advice for the accomplishment of this project work. I am deeply grateful to thank all the professionals in clients, consulting, contractors and regulatory auditors who made this project work possible by responding to quistionaires. I am also very grateful to my collegues who supported me in distrusting and collecting research questionnaires. Lastly but not least, I express my special feeling to my mother Amina A/biya for her psychological and moral support during my entire study. Finally, I would also like to yhanks my friends for their support.

Contents

LIST OF FIGURES

ACRONYMS

ACWP- Actual cost for work performed

BCWP- Budgeted cost for work performed

BCWS- Budgeted cost for work scheduled

CPI- Cost performance Index

E.C- Ethiopian Calendar

ETB- Ethiopian Birr

GDP- growth Domestic product

G.C- Gregorian Calendar

GNP- Growth national product

IAMP- Infrastructure Asset Management Plan

BTM- Bishoftu Town Municipality

BTCCP- Bishoftu town cobblestone construction project

Km-Kilometer

PMBOK-Project Management Body of Knowledge

RII- Relative Importance index

SPI- schedule performance Index

SPSS- Statistical package for social science

UAE-United Arab Emirates

ULG-Urban Local Government

ULGDP-Urban Local Government Development Project

WBS- Work breakdown structu

CHAPTER ONE

INTRODUCTION

1.1. Research Background

Project managemnent originated in construction and aerospace because the environment and the kinds of activities demanded flexible forms of management. “When a job requires substantially more resource (people, capital, equipment, etc.) than are normally employed by department or organization, project management techniques may be necessary (John, 2004).”

Construction industry has complexity in its nature because it contains large number of parties as clients, contractors, consultants, stakeholders, and regulators. In construction projects the import ance of measuring performance is critical in the process of control, since it allows monitoring the performance to achieve the ultimate objectives (Haponava and Al-Jibouri, 2008).According to Jekale (2004) “The success and failure of any construction projects depend on its performance, which is measured based on timely completion, within the budget planned, required quality standards and customers satisfaction.Moreover, Projects must meet budget, schedule, safety, and quality goals to be regarded as a success.”

Construction sector has a huge influence in the advancement and attainment societal development goal. As different literature reviews indicate construction is one of the largest industries and contributes about ten percent of the gross domestic product (GDP) in industrialized countries (Navon, 2005). Similarly, Kenny (2007) argues the sector’s role in economic development is undeniable –housing, roads, utility networks, schools and clinics are all built assets.

Other studies indicated by (Ofori, 2006), (Jekale, 2004) that in many developing countries, major construction activities account for about 80 percent of the total capital assets, 10 percent of their GDP, and more than 50 percent of the wealth invested in fixed assets. In addition, the industry provides high employment opportunity, probably next after agriculture. Despite the construction industry’s significant contribution to the economy of developing countries and the critical role it plays in those countries development, the performance of the industry still remains generally low.

Past, studyworks by (Saraf. et.al 2013), Mamaru,et.al, (2017), Abbas, et.al.2015)] have shown that factors, for example, contractual workers capacity, cost increment, quality, project the magement system, the executives dynamic capacity, improper pplanning, ill-advised structuring, site supervision, construction techniques, lack of worker and specialized staff, quality and deficiency of materials, construction botches and substandard work, efficiency, successful correspondences between building, expert, construction, and project management teams, and give support the project manager, increment in material cost, insufficient supply of human resource, inaccurate scheduling, incorrectly strategy for estimation, and poor monetary control on the work area and so forth are among the elements that influences project iperfomace in construction areas.

Presently, the road construction project is expanding at alarming pace in Ethiopia. There are many leading projects that are being carried out by the the Ministry of Urban Development and Construction and being run in different cities of Ethiopia; among them is the Urban Local Government Development Project (ULGDP). Besides, Bishoftu town is not an exception. The main goal of ULGDP is to assist for better implementation in planning and sustained provision of priority municipal services and infrastructure by urban local governments (ULGs).

One of the priority services selected by ULGs for improvement is improved road access throug hthe construction of cobblestone roads.All participating ULGs have included cobblestone road const ruction as part of the prioritized Capital Investment Plans (CIPs).Work on providing cobblestone con struction services in Bishoftu town has showing considerable progress in recent time in terms of distance it covered.

But the performance in cobblestone construction is a major concern in the construction industry. The performance of project work became an issue of concern to the Government, contractors, consultants, project customers and end-users/clients, and it is also the main problem on the Bishotu Town cobblestone construction project. Bishoftu town has 564.61km of measured roads, which include asphalt, Gravel road, cobbles stone road and compacted earth under municipal boundary. The road sector is mainly dominated by Cobble Stone road that constitute more than 28.23% of the total road networks. Since recent years, the city administration is taking initiations to develop main routes with standardized asphalt concrete roads and cobblestones for inner roads.

Therefore, in order to improve the project performance of the, especially construction sector, it is essential to determine the factors that affect project performance. In order to achieve this, the variables for project failure are essentially important to be identified and established towards achieving the objective of this study. Thus, this research study is very important to identify those factors that affect project performance of cobblestone road construction project in Bishoftu Town

1.2. Statement of the Problem

As cited in Abadir (2011), **"**…many projects in developing countries encounter considerable time and cost overruns, fail to realize their intended benefit or even totally terminated and abandoned before or after their completion. Moreover, the development of the construction industry in developing countries generally lags far behind from other industries in those countries and their counter parts in developed nations". Generally, as (Ofori, 2006) and (Jekale, 2004) concluded, "The construction industry in developing countries failed to meet expectations of governents, clients and society as a whole".

Similar to the case with other developing countries, the Ethiopian construction industry shares many of the problems and challenges. Road construction sector is one of the key economic sectors of Ethiopian national economy. However, it suffers from a number of problems that affect project performance in terms of project performance parameters like time, cost and quality. Given the critical role the construction industry plays in Ethiopia and the poor level of performance of the construction industry, improving the performance of these sectors ought to be a priority action.

As studied in the literatures of Saraf (2013), Van et al (2015) and Babu (2015), the major factors affect project performance were insufficient implementing capacity, selecting inappropriate project management, improper design, incorrect planning, and wastes around the site, weather condition, and incompetent supervision consultant. In addition to this, delays in project completion and poor performance in the construction industry has been experienced and has led to failure in achieving effective time, quality and cost performances. Many construction industry sectors have been experiencing chronic problems such as poor safety, inferior working conditions and insufficient quality. In the developing countries like Ethiopia, the cost of road construction takes a major part of the budget. As a consequence most of the project faces huge

amount of time delay, cost overrun and quality performance problems. With this regard, it is very essential to deal with factor affecting project performance of cobblestone road construction projects in Bishoftu town in order to enhance the status of road sector.

There have been many researches conducted on the factors affecting performance of construction projects; however, to the best of my understanding, none of them has carried out study on the particular topic dealing with factors affecting performance of cobble stone construction project in Bishoftu town.Hence, this research aims to fill this observable gap by identifying the factors affecting pperformance of cobblestone road construction projects in Bishoftu town.

1.3. Research Objectives

1.3.1. General objective

The general objective of this study is to identify factors affecting the project performance in a case of Bishoftu Town cobblestone road construction projects.

1.3.2. Specific Objectives:

a. To examine the performance of cobblestone construction projects in Bishoftu town.
b. To identify project managementrelated (internal) factors affecting project performance of cobblestone road construction projects in BishoftuTown.
c. To identify external related (clients, supplies, technology related) factors affecting project performance of cobble stone road construction projects in Bishoftu Town.

1.4. Research Questions

This study is motivated to fill the gap by answering the following research questions on factors affecting project performance of cobblestone road construction in Bishoftu Town.

1. At wha level of performance of Bishoftu town cobblestone projects exists?
2. What are the projectmanagement related (internal) factors affecting the projectperformance of cobblestone roadconstruction projectsinBishoftuTown?
3. Whatarethe external-related factors (clients, supplies, technology related) affecting the projectperformance ofcobblestone road construction projectsinBishoftuTown?

1.5. Significance of the study

The findings of this research work are expected to come up with sufficient information for the concerned parties about factors affecting the project performance on the cobblestone road construction in Bishoftu Town. Moreover, the result of this study would serve as a stepping stone for further studies on the project performance of the cobblestone road construction in Bishoftu Town and for other similar projects.

1.6. Research Scope

This study is limited to bishoftu town cobble stone road construction projects in last two years from 2018 to 2019 or from 2010 E.C to 2011 E.C of fiscal year due to time and financial constaints. Bishoftu town was chosen by the reaseacher because the town is well known by cobblestone road construction interms of the total road coverage of the town roads and also near to the researcher place of residence. This study was specifically carried out using cross sectional along with descriptive design method focusing on identifying factors affecting project performance against three performance parameters of cost, time and quality.

1.7. Limitation of the study

Limitation of this study is about the respondents as the covid 19 infection spread across the country, it was difficult to get information from all the respondents. Because of this that 64 questionnaires returned from the total of 89 questionnaires that were distributed.

1.8. Definition of key terms

Project: A project is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification (Wysocki ,2014).

Project Quality: Quality is ability to conform to the requirements of the end-item andwork processes and procedures, and mines the ability of service or product to perform itsspecified tasks (Project Management Institute).

Project Schedule Delay: Schedule delay is the time extended from the original projected compl etion date to the actual date of completion (Nicholos, 2004).

Cost Overrun: Cost overrun is defined as the amount of money expended on a project at the conc lusion of the job that exceeds the initial project cost estimate.

Project Management: The application of knowledge, skills, tools and techniques to project activities to meet the project requirements (Wysocki ,2014

1.9. Organization of the study

This study has been organized into five chapters. First chapter contains, introduction to the research, sstatement of the problem, study objectives, research questions, and significance of the study, scope and limitation of the study and definition of key terms. Second chapter includes the literature review that related to the study. Third chapter is about methodology, research design, study population, sample and sampling procedures, data collection techniques, and data analysis techniques. Chapter four was about data analysis, presentation and interpretation. Finally, the last chapter is about the summary of the finding, conclusions, and recommendation of the study.

CHAPTER TWO

Literature Review

2.1. Introduction

The aim of this study is to identify factors affecting performance of cobble stone construction project in Bishoftu Town. So, detail of literatures that are related to this study was reviewed to achieve the research objective. Some of the key concepts used in the research are highlighted including some theoretical contributions from literature. A literature review helps in the development of understanding of the previous research that has been done relating to the objectives, aims and helps in the refinement of the ideas to which the research will be built. The Literature review was obtained from article review, secondary sources, relevant magazines and journals, institutional reports, text books, government publications and projects among others.

2.2. Theoretical Literature Review

Different authors define project in different ways. Among many definitions provided by different authors let us take project definition given by the following two authors. First, John M. Nicholas (2004), define project as:

1. Involving a single, definable purpose or end-item (product or result). The purposes specified in terms of cost, schedule, and performance requirements. Accordingly, Purpose and end-item change from project to project.
2. Unique. A project requires doing things differently than before. A project is a one kind activity, never to be exactly repeated.
3. A temporary activity. It is undertaken to accomplish a goal within a given period of time; once the goal is achieved, the project ceases to exist.
4. Utilizing skills and talents from multiple professions and organizations. A project often requires multiple skills that rely on task interdependencies which may introduce new and unique problems. Tasks and skill requirements change from project to project.
5. Possibly unfamiliar. It may encompass new ideas, approaches, or technology and possess elements of significant uncertainty and risk.

6.The process of working to achieve a goal. A project passes through several distinct phases; tasks, people, organizations, and resources change as the project moves from one phase to the next. The characteristics that distinguish projects make it necessary to employ a kind of management suitable just for them.

Second, Robert K. (2017)define project as a " sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification."

Every project has three overriding dimension goals to accomplish work for client or end- user in accordance with budget, schedule and performance requirements.

The budget is the specified or allowable cost for the project; it is the target cost of the workto be done.

The schedule includes the time period over which the work will be done and the target datefor when it will be completed.

The performance requirements specify what is to be done to reach the end-item or finalresult. Performance, schedule and cost are interrelated, and a package agreement must be reached wherein all three parameters are acceptable to all parties.

Construction Project Performance Measurement:Quality,Cost and Time Performance

Project performance can be explained using "two success concepts" according to (Baccarini, 1999): project management success and product success. The first concept focuses upon the successful accomplishment of the project time, cost and quality, which can be measured in terms of meeting the project budget, schedule, and conformance to functional and technical specifications respectively. The later concept deals with the effects of the project's final product with three key components which are; to satisfy the project goal, purpose and stakeholders. Another criteria for evaluating project performance (Pheng & Chuan, 2006) is by firstly relating to the owner, users, stakeholders, and the general public (looks at projects from macro view point of overall goals of functionality and benefits) and secondly the developer and the contractor; the groups of people who look at project performance from the micro viewpoint (Completion time, cost, quality, safety and profitability).

Project measurrement can upgrade the capacity of information with the goal that it gives the improved lconstruction execution at all levels. As it was clarified by Aschalew (2017) measurement is a center movement for segment that is centered on conveying results. Besides, he included that presentation is estimated principally permit amplifying the outcomes that are significant to associations by modifying item or administration, utilizing the abilities and subsidizing accessible".Navon(2005) explained performance measurement as an "examination between the anticipated and the tangible perfomance". He likewise expressed that exhibition estimation is required not exclusively to control current activities yet in addition to refresh the notable database. Such updates empower better arranging of future tasks as far as costs, schedule, quality and work portion. In such matters project execution is estimated as far as implementation quality, cost and time.

Quality of the project: ‘’The Project Management Institute defines quality as “the degree to which a set of inherent characteristics fulfill requirements.” Quality is capacity to comply with the prerequisites of the standard and work procedures and methods, and mines the capacity of administration or item to play out its predetermined task. Quality execution of the project is a typical determinant that is applied to evaluate the degree of execution in construction project. Likewise, project execution additionally can be gotten dependent on the participants‟ fulfillment levels as it was clarified in Jha and. Iyer (2006). In constructiond project absence of value brings about postponements, cost overwhelm and risky structure. As per Abbas et.al (2015) "quality is one of the significant key presentation pointers of a construction venture which may cause cost invade and time delays".

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PMBOK describes project quality management as “…includes the process required to ensure that the project will satisfy the needs for which it was undertaken. It consists of determining the required condition, quality planning, quality assurance and quality control.” Similarly, Kenneth

H.(2005) argues achieving quality in project implementation is not a matter of luck or coincidence; it is a matter of management.

Project Schedule Delay: Schedule delay is the time extended from the original projected completion date to the actual date of completion.Schedule delays can result from numerous factors and can happen at any time during project construction. Numerous investigations have been done with respect to the pproject sschedule delays. As per Abdul-Rahman (2006) delays in projects are viewed as one of the most widely recognized issues causing a large number of negati ve consequences for the task and its involved parties.As citedin AlHammad and Nawab (2016)the construction delay maybe definedasthe time overruneither beyond completion date specifiedina contract,or beyond the project deliverydateas agreedby parties (Assaf and Al-Hejji,2006).

As research of Jekale (2004) indicates, less than 25 percent of road projects were completed within the initial contract period. The efficient estimation of perfomance is a critical as it is required so as to decide ıareas of progress. cited in Samir and Abu Shaban (2008), Brown and Adams (2000) found an assessment structure to quantify the productivity of building project ımanagement by utilizing ordinary monetary investigation devices, for example, time, cost and quality. Time iperfomance of the project is checked by the work program arranged preceding initiation of the task. Moreover, the time perfomance concerns the span expected to finish the project as per its schedule.

Many researchers have been carried out both in developed and developing countrie investigate the factors that have a substantial effect on the construction projects performance. Finally, the project schedule was measured by schedule performance index (SPI) which is defined as the ratio of budgeted cost of work performed to budgeted cost of work scheduled, Burke (2001). If the calculated SPI is less than one, then the project status was behind schedule. If SPI is equal to one, then the project period was as planned, and finally, if SPI is greater than one, the progress of project period was ahead of schedule.

Cost overrun: Cost overrun is defined as the amount of money expended on a project at the conclusion of the job that exceeds the initial project cost estimate. In other word, it is defined as the difference between the final, completed cost of a project and its initial cost estimate. The result of a project that has gone over budget may be a shortage of funds and/or possible cancellation or delay of one or many other projects. If this continues for a period of time, cost

overruns could affect numerous projects, resulting in budgetary problem and the deterioration of infrastructure.

PMBOK depicts project cost management as "… incorporates the procedure required to guarantee that the iproject is finished inside the stated financial plan; it comprises of rresource planning, cost evaluating, cost planning, cashflow and cost control."

The schedule delayand cost overrunare measured by performance indices as Burke, (2001) had explained. Accordingly,the cost performance index (CPI) measures whether the project was under cost performance,on the targetor overthe cost performance. CPIis calculated by dividing budgeted costfor work performedto the budgeted cost for work accomplished.If the calculated CPI is less than one,the project was accomplishedby consuming morethan what was budgeted. If calculated CPI is equalto one, the project wason the budget and cost consumed on the project was as planned. Andif CPI is greaterthan one the project progress was consumed fewer budgets than forecasted budget. Shortly, the schedule performance index, schedule variance, percentageof the schedule performance, cost performance index, cost variance and percentageof the cost varianceare calculatedand summarizedin the followingway:

Where; CPI is cost performance index, SPI is schedule performance index, BCWS is budgeted cost for work scheduled, and BCWP is budgeted cost for work performed, ACWP is actual cost for work performed .On the other hand, Cost Variance (CV) is the measure of deviation between the earned value (BCWP) and actual cost of doing the work (ACWP). The percentage of cost performance (CV %) is calculated as CV/BCWP. And schedule variance (SV) measures the time deviation between the planned progress (BCWS) and the earned value (BCWP); SV=BCWS-BCWP.

The percentage of schedule performance (SV %) is calculated as SV/BCWS. Negative cost variance shows that project cost is higher than the original estimate cost and positive cost variance indicates the project consumes less cost than original estimation.Negative schedule variance on the other hand, indicates the project is behind schedule whereas positive schedule variance indicates the project is ahead of schedule

2.3. Empirical Literature Review

Before proceeding to the discussion of the empirical literature let's highlight the literature gap in the following table 2.1

Table2.1. Literature gap

Author(s)	Study title	Findings
Mamuaru et al. 2017 , Ethiopia	Investigation of success factors on construction management system Addis Ababa ,Ethiopia	Decision making effectively ,project delivery building system , timely decision by project owners representati ve, contractors cash flow leadership skills, of project manager , adequacy of fund
Matu 2016	Factors influencing performance of contractors in the road construction sectors : a case of selected contractors in Kenya	Working capital, Skilled manpower, Organization structure and Client supprt
Saleh and Abu Shaban 2008	Factors affecting of construction the performance of construction project in Gaza strip Palestine	Project delay, leadership skills, availabi lity of resource ,escalation of material price, availability of experienced and qualified personnel quality of equipment and raw materials
Melba, et al (2015)	Study and analysis of factors affecting the performance of the construction projects in India	Increase in material cost, inadequate labor supply, incorrect planning, wrong method of estimation, poor financial control on site.
Peter&Evelyn (2015)	Factors affecting the Performance of construction projects in Kenya	Actual cost exceeds estimated cost, delays of payments to contractors, leadership skills for project manageme nt, quality of equipment and Raw material in project.
Mbawi	Factors affecting project	Planning, management support, human

and Mucheluley 2015 ,Kenya	performance among Kenyan universities in Kisumu county	capital, Communication and monitorin g and evaluation.
Aftab et al (2014)	Factors affecting construction cost performance in project management, Malaysia	Increase in material cost, inadequate labor supply, incorrect planning, wrong method of estimation, poor financial control on site.
Jha and.Iyer,2006,In dia	Factors affecting quality performance in construction project	Project manager competence,top management support, monitoring and feedback by project participants.

Research Gaps

Studies that have been reviewed in above table 2.1 have not adequately indicated extensively the factors affecting cobblestone construction projects. Mamaru et al (2017) under take their study in Addis Ababa, which was limited to the success factors of building construction. Like that most of these studies listed in table 2.1 above are limited to building and roads construction rather than cobblestone construction most dominated project in our country with few budgets.Th erefore,thes studies have failed to deal with the factors affecting cobblestone construction project

Projectmanagementrelated factors

Traditional project management skills were developed from the requirements of construction and defense industries to plan, control and manage large and complex tangible projects Bourne and Walker, (2004). Project Management can also be seen as being about managing change and project managers should consider themselves as change agents adding to the Project Management role an additional focus on the aspects of relationship management, Bourne and Walker (2004). Project management has a mandate to identify the causes of project failure and the various factors that lead to project success. The application and integration of modern management and project management knowledge, skills, tools and techniques to the overall planning, directing, coordinating, monitoring and control of all dimensions of a project from its inception to completion, and the motivation of all those involved to produce the product, service or result of the project on time, within authorized cost, and to the required quality and requirement, and to the satisfaction of participants (Kerzner, 2005)."

Moreover, according to Bourne and Walker (2004), in most organizations project managers are accountable for the successful delivery of complete projects. Increasingly, this success depends on project managers‟ processing and utilizing skills and competencies. A successful project manager must demonstrate flexibility and competency in many areas. Many of the initiatives for improving the practice and profession of project management have been focused on enhancing techniques and method associated with skills that included effective management of time, cost and scope. The management of construction project requires knowledge of modern management as well as an understanding of the design and construction process. Specifically, project management in construction encompasses a set of objectives which may be accomplished by implementing a series of operations subject to resources constraints.

.Project Related Factors

The performance of construction projects does not meet optional expectations. One aspect of this is the performance of the participants who are interdependent and make a significant impact on overall project outcomes. Of these participants, the client is traditionally the owner of the project, the architect or engineer is engaged as the lead designer and a contractor is selected to construct the facilities. Niazai and Gidado (n. d) in their study identified the project factors that causes the project delay in Afghanistan are: Original contract duration is too short, legal disputes between various parties, inadequate definition of substantial completion, ineffective delay penalties, type of construction contract.

Babalolaand Ojo (2016) in her thes is study pointed out the project related factors that influence the project performance are complexity of the project, project type, nature of project, duration of project.These projects relatedfactorsarealso discussedby Albert et al (2002) As Citedinthe research of Kawira (2015), Satterthwaite et al.(2002), state that unclear project goals and objectives can result in project failures Time Managementisthe process within which time spenby staff undertaking project tasks is recorded against the project

As cited by Tekalign (2014),“Project management Institute (PMI) definethe projectasa temporary endeavor (that hasdefinite beginning an end time) undertaken following specific cycle of initiation,

definition, planning, executionand closeto createaunique product, service,orresult through novelorganizationand coordinationof human, materialandfinancial resources (PMI, 1996).''

Contractors Related Factors and Project Performance

In construction industry, the performance of the contractor isvery important in maintaining the p roject performance. Selecting a competent contractorfor a job is critical for the successful deliver yof a construction project.The owners of the project need to select the contractor so as to perform their activitiesin good manner. Regarding the performance of contractor, many studies were under taken. Among them According toAssaf and Al Hejji(2006), the four key causes of delay accordi ng to contractors are insufficient client payments for completed andongoing work, subcontractor issues, acquiring difficulties for work permit and approval, and availability and failure of equip ment. Al-Najjar (2008) concluded that the most important factors causing time overruns in building construction projects in the Gaza Strip as perceived by contractors are lack of materials in the markets,shortage of construction materials at site, delays of material deliveries to site,cash shortages during construction, poor site management, poor economic conditions (currency, inflation), shortageof equipmentand tools on site, and owner delay in freeing the contractors payments for completed work.

Difficultiesin financing projectby contractor, reworkdueto errors during construction,poor site management and supervision by contractor, poor communication and coordination bycontractor with other parties, ineffective planning and scheduling of project by contractor, improper construction methods implemented by contractor, delays in sub-contractors work, inadequate contractor‟s work, poor qualification of the contractor‟s technical staff, delay in site mobilization are among the factors that cause the project delay in Afghanistan Niazai andGidado (n.d). Accor ding to Motaleb and Kishk (2010), the cause of project delay in UAE that are related to the contractor factors are late delivery of materials, slow mobilization of labor, strikes, inappropriate construction methods, low motivation, unreliable of sub-contract, inadequate contractor experience, contractor‟s financial difficulties.

Client related factors and project performance

In construction industry, the performanceofthe contractorisvery importantin maintainingthe project performance.Selectinga competent contractorfora jobis criticalforthe successful delivery ofa construction project.The ownersofthe project needto selectthe contractorsoasto perform theiractivitiesin good mannerRegarding theperformance of contractor, manystudies were under taken.Amongthem According Assafand Al-Hejji (2006), the fourkey causesof delayaccordingto contractorsareinsufficient client‟.s paymentsfor completedand ongoing work,subcontractor issues, acquiringdifficultiesfor work permitand approval,and availabilityand failureof equipment. Al-Najjar(2008)concludedthat themostimportant factorscausingtime overrunsin building construction projectsinthe Gaza Stripas perceived by contractors are lack of materials in the markets,shortage o f construction materialsat site, delaysofmaterial deliveriesto site,cashshortages during construction, poor site management, pooreconomic conditions(currency, inflation), shortageof equipmentand toolson site,and owner delayin freeing the contractors payments for completed work.

Difficulties in financing lprojectby contractor, rework due to errors during construction, poor site managementand supervision by contractor,poor communication and coordination bycontractor withother parties, ineffective planning and scheduling of project bycontractor, improperconstruct ion methods implemented by contractor,delays in sub contractors work, inadequatecontractor'sw ork, poor qualificationofthe contractor‟s technicalstaff, delayinsite mobilization are amongthe factorsthat causes the project delay in Afghanistan Niazaiand Gidado (n. d). According to Motaleb and Kishk (2010),thecauseof projectdelayin UAE thatarerelated tothe contractor factorsare late deliveryof materials, slow mobilizationof labor, strikes, inappropriate construction methods, low motivation, unreliable of sub contract, inadequate contractor experience, contractor' financialdiffi culties.

Material and project performance

The quality and strength of the any road project relies upon various parameters. It is suggested that essential material and works quality affirmation component be set up. Wambui et al (2015) expressed that material administration is one of the most significant factors in consruction industry. Efficiency can be influenced whenever required materials, apparatuses, or construction material for the particular are not accessible at the right area and time. As examined in Zarihun (2017) theory, materials related imperatives are lack of materials, material manufacture delay,

slow conveyance of requested materials, and resistance of material to determination, unanticipated material damages and material acquisition issue. Absence of construction materials in markrtplace, changes in material sorts and particulars during development, delay in material conveyance, late acquisition of materials, late in determination of completing materials because of assorted variety in market are material related elements that causes the task delay in Afghanistan, Niazai and Gidado (n. d).

External Factors

External elements that influences the enterprises particularly road ventures are arranged as socia political, and economic components. Dwindle (2015) depicted the external factors that impact the projectexecution in their writing are financial condition, social condition, politics, physical condition, modern technological development, and level of innovation progressed.These element s incorporate climate condition, squander around the site, Babu (2015). As per Ahmed et al., (2002) the reasons for external related project execution are stormy/fervently climate condition, common aggravation, unanticipated site condition, government guideline, and moderate procedure of building grant, value variance, transformation, war, revolt, extraordinary climate, tremor, landslip, fire, political and monetary unsteadiness. As indicated by Odeyinka and Yusif (1997) as refered to in Haseeb et al (2011), the primary outside reasons for delay in Nigerian nventures are cataclysmic events, climate conditions, clashes, and work questions and strikes, unexpected site conditions, authoritative changes, administrative changes, issue with neighbors, and clashes. Outside related elements that causes the venture delay in Afghanistan as per Niazai and Gidado (n. d) are defilement, cataclysmic events, climate condition, impact of social and social elements, traffic control and limitation at place of work, organization in Government offices, changes in government guidelines and laws, market swelling etc.

2.4. Conceptual Framework

The Conceptual Framework gives a depiction on how the variables relates to each other. The variable distinct here is the independent and dependent variable. The independent variables in this study are management-related, project-related, client-related, contractor-related, material-related, equipment-related and external factors. The dependent variable is project performance (time, quality, and cost).

The conceptual framework is shown in Figure 2.2.

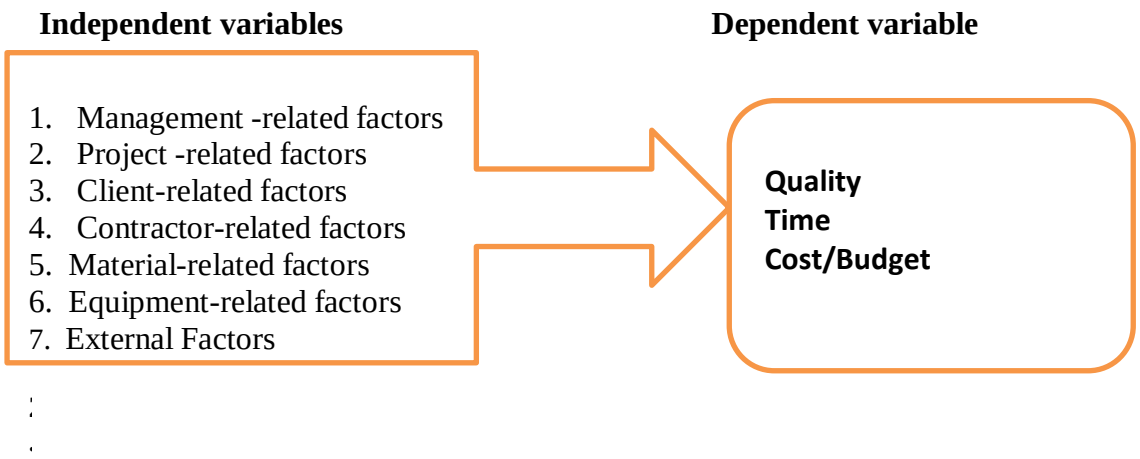

Figure 2.2. Conceptual Framework

CHAPTER THREE

Research Methodology

3.1. Introduction

This section discusses the description of study areas, research design, poputation of the study, Sample size and sampling procedures, source of data, method of data collectio, Description of the variables and coding method of data and analysis and interpretation used.

3.2. Description of Study Area

Bishoftu town is located at 47.9km South East of Addis Ababa along the main road to Adama. Geographically, the study area located by latitude $8^0$45'25"N-8^o50'30"N and longitude 38^o51'55' E-38o56'5" E covering a total area of 35.96 km2. It is located at an average altitude of 2100m above sea level. Progresses have been seen in the town since a number of houses, manufacturing, service sector and institutions have been constructed. The population is also rapidly growing because of its nearness to Addis Ababa and economic importance.

According to infrastructure asset management plan (IAMP) report of 2011, Bishoftu town has 564.61km of measured roads, which include asphalt, Gravel road, cobbles stone road and compacted earth under municipal boundary. The road sector is mainly dominated by Cobble Stone road that constitute more than 28.23% of the total road networks. Since recent years, the city administration is taking initiations to develop main routes with standardized asphalt concrete roads and cobblestones for inner roads. The summary of existing road network in Bishoftu town up to 2011 E.C. is shown on Table 3.1 below.

Table 3.1: Status of existing road construction projects in Bishoftu Town

Road Description	Unit	Lengths in km
Asphalt Roads	Km	113.08
Cobble Stone road	Km	162.16
Red Ash	Km	160.54
Gravel road	Km	35.81

Earth pressed road	Km	8.54
Earthen road	Km	99.97
Large block stone	Km	0.37

Source: Bishoftu town infrastructure asset management plan (IAMP) Report, 2011

3.3. Research Design

This study was focused on the factors affecting project performance of cobblestone construction in Bishoftu town from 2010 E.C to 2011 E.C or 2018 to 2019 for the last two years. The reaseacher used cross sectional design in this study.This is due to the fact that the data was gathered at one point in time from the respondents of the study in order to address the study objectives.This study is descriptive in terms of research purpose. Descriptive design helps to describe existing situations as it is. Thus, this study has tried to describe factors affecting the performace of bishoftu town cobblestone construction projects in the past two years.

3.4. Population

This study was undertaken in Bishoftu Town cobblestone road construction projects. The data used for this study comprises the cobblestone projects started in last two years starting from 2010 E.C. The projects reviewed were 10 from 51 projects that were selected using purposive method. The respondents for this study were contactors, clients and consultants and regulatory auditors

3.5. Sample size and sampling procedures

A sample design is a definite plan for obtaining a sample from the sampling frame (Kothari,2004). It refers to the technique or the procedure the researcher would adopt in selecting some sampling units from which inferences about the population is drawn (Kothari, 2004).

The Study was conducted to identify factors affect project performance in the case of Bishoftu town cobble stone road construction. The population of this consists of all the professionals in the study area whowere consultants,clients, contractors and regulatory professionals. Accordingly 89 target populations and 51cobblestone projects were identified. To increase the precision and quality of data all professionals were participated in the questionnaire survey since they are man ageable.Thus,in this study,all of the target populations were considered;the sample size was 89.T

herefore, census method of sample size determination technique was used.On the otherhand,10 c obblestone projectfrom 51 cobblestone projects were selected using purposive method.

3.6. Research instruments

Questionnaires were the main instruments used in this study. In addition to primary data, review of existing documents as a secondary data which show the 51 cobblestone projects within two years among those 10 of them will be thoroughly analyzed. This served as a benchmark for my study since it shows the problem of project performance in the sector of construction. The primary data collected through questionnaires were divided in to two parts; part one about general or basic information of respondents and project whereas part two were deal with the lists of factors affects project performance of cobblestone construction in line with seven independent variables.

3.7. Data collection Procedure

Questionnaires were the main instruments used. The population for the study comprises of client, consulting firms, contracting firms and professionals in the study area. The available document sources relevant to the study were reviewed and primary data was collected through questionnaires distributed to selected target population group and collected accordingly

3.8. Method of Data analysis and Interpretation

Analysis of primary data from the questionnaires involves sorting and coding according to their respective uses. The study generates both qualitative and quantitative data. The information was coded and entered and analyzed using Statistical Packages for Social Sciences (SPSS) Version 20 and analyzed using descriptive statistics. The researcher was organized and presents the finding of descriptive statistics in terms of tables.

Furthermore, the most important factors affecting the performance of Bishoftu town cobblestone construction project were ranked by using the relative importance index (RII). The relative importance index method (RII) was used to determine owners, consultants, contractors and regulatory auditor perceptions of the relative importance of the key performance indicator

(independent variables) in Bishoftu town Cobblestone construction projects.As cited in Abu Sha ban thesis (2008) the relative importance index is computed by using the following formula (Che ung et al, 2004; Iyer and Jha, 2005;Ugwu and Haupt, 2007)

$$RII=\sum W /(A)\ (N)$$ Where;

RII= Relative Importance Index

W = Weight given to each factor by respondents ranging from 1 to 5

A = Highest weight, in our case 5.

N = Total number of respondents.

3.9. Description of the variables and coding

Table3.3. Coding of dependent variables

Dependent Variable (Project performance)	**Factor Categories**
Quality problem	0=No 1=yes
Cost overrun problem	0=No 1=yes
Project delay	0=No 1=yes

Sources: primary data

Table3.4. Coding of explanatory variables

Gender	**1=Male, 2= Female**
Position	1=Consultant, 2=Contractor, 3= Client, 4= Regulatory auditors
Age	1=20-30, 2=31-40, 3=41-50, 4=above years
Experience	5=less than 5, 4=5-10 years, 3= 10-15 years, 2= 15-20 years, 1= above 20 years
Education	1=PhD, 2=Masters, 3=BA, 4=Diploma 5=certificate

Factors, likert 5=very high scale	1=very low, 2= low, 3=neutral 4=high,

Sources: primary data.

3.9. Validity and Reliability of the study

Validity

One research must be fulfilled the validity of the research instrument and reliability at the same time. This was because without testing valid and reliable research instrument analyzing the result would end with ambiguity. Content validity is one of the parts of validity in which a measuring instrument provides adequate coverage of the topic under study as Kothari (2004) said. He added that if the instruments contain a representative sample of universe, the content validity is good. It was from this point of view that the content validity of the research instruments was thoroughly reviewed and the respondents understood the content of the questionnaires and responded under the study. Table 3.5 shows the collected data is valid 100 percent.

Table 3.5 the validity of the variables

		Respondent	Percentage
Cases	Valid	64	100.0
	Excluded	0	.0
	Total	64	100.0

Source: primary data

Test for Reliability

Reliability is a necessary but not sufficient condition for validity; a reliable scale may not be valid (Babin et al 2009). Likewise, Kothari (2004) states dependability isn't as important as validity, yet it is simpler to scale unwavering quality in contrast with validity. Hence, in the event that the nature of the dependability is fulfilled by an instrument, at that point while utilizing it we can be sure that the transient and situational factors are not meddling

The Cronbach's Alpha is an instrument used for checking of the reliability of the research instrument.Generally speaking, scales with a coefficient between 0.80 and 0.95 are considered

to have very good reliability;Scales with a coefficient between 0.70 and 0.80 are considered to have good reliability and a value between 0.60 and 0.70 indicate fair reliability; when the coeffic ient is below 0.6, the scale has poor reliability (Babin et al 2009).

Table3.6 cumulative cronbach's alpha

Cronbach's Alpha	Number of Items (average)
0.813	7

Source: primary data.

S/N	**Factors**	**Cronbach's alpha**
1	Project management related Factors	0.864
2	Project related factors	0.837
3	Contractor related factors	0.732
4	Client related factors	0.833
5	Material related factors	0.821
6	Equipment related factors	0.784
7	External related factors	0.813
	Total	0.813

Source: primary data

Table 3.6 above shows that the values of Chronbach's Alpha for each filed of the questionnaire and the entire questionnaire

CHAPTER FOUR

Results and Discussions

4.1. Introduction

This chapter discusses the analysis, interpretation and presentation of the findings of the study. It represents the analysis of the data on the factors affecting project performance: a case of Bishoftu town cobble stone construction projects. The secondary data or review of documents included in this study was from 2018 E.C to 2011 E.C.

The response rate

The target population size of the study was 89 respondents. The questionnaires were distributed to all target respondents from which 64 filled in and returned. As cited in research of Wambui et al (2015), Mugenda and Mugenda (2003) observed that a 50% response rate is adequate, 60% good, while 70% rated very well. This indicates that based on this assumption, the response rate in this case is 71.91%. Therefore, the data is sufficient for analysis and reporting.

4.2. Demographic Characteristics of Respondents

The respondents' sex, age, level of education and experience are discussed as follows.

4.2.1. Gender

The result of the finding shows, among the total respondents majority of the respondents are male which account 73.4 percent while female account 26.6 percent as indicated in the table below. Majority of the project participant are male which indicates female are less involved in the construction work. This indicates female participants which account more than half percent of the country population are less considered in the projects activities. Having taken these assumptions into consideration, it would be very important to make female participate in the project area so as to enable generate their livelihood income, and to enable them to contribute for the development of the country as a whole.

Table 4.1. Gender of respondents

Gender		
	Frequency	Percent
Male	47	73.4
Female	17	26.6
Total	64	100.0

Source: primary data

4.2.2. Age of respondents

The age group of the respondents has been presented in the table below.

Table 4.2 Age of respondents

Age		
Age description		
	Frequency	Percent
20-30	44	68.8
31-40,	14	21.9
41-50	6	9.4
Total	64	100.0

Source: primary source

As it has been shown in the above table, the majorities of the respondents were between 20-29 ages brackets which account 68.8 percent of total respondents and followed by the age brackets of 30-39 took the second place by 21.9 percent of total respondents. Finally, 9.4 percent of respondents represent the age brackets of 40-49. Since the majority of the people involved in the project area are young people, and majority of the respondents were young people too, it would enabled the researcher to get appropriate and sufficient information about the subject under study. Consequently, this indicates that the respondents are able enough to respond to the required information for the analysis result and comment on the findings under consideration.

4.2.3. Level of Education

In conducting research it is important to know the composition of educational level of respondents so as to interpret and analyze. Thus, the levels of education of the respondents are shown below.

Table 4.3. Education level

Education

	Frequency	Percent
Masters	8	12.5
BA	35	54.7
Diploma	14	21.9
Certificate	7	10.9
Total	64	100.0

Source: primary data

From the above table, we can infer that majority of the respondent are BA degree holders which accounts about 54.7 percent followed by diploma holder which represents about 21.9 percent and the least is indicated by certificate holders. As known in project management having relevant theoretical as well as practical skills is paramount determinant in the performance of every project. Therefore, the level of education is one of the critical demography factors that contribute to the enhancement of the project performance in the cobblestone construction sectors. Nowadays, the Ethiopian government is launching the job opportunity to the universities and colleges graduate students to reduce the unemployment rate in the country. Therefore, it needs special attention in organizing and mobilizes those in to construction sector so that the project performance is maintained. It is unquestionable that the respondents do have crucial knowledge and able to provide relevant information on the areas of research study.

4.2.4. Position of respondents

While conducting a research, it is inevitable to consider the position of the respondents for the sake making the research dependable. As a result, table 4.4 shows the respondents position indicating that contractors, regulatory auditors, clients and consultants are the respondents groups with high rate of response 40.6 percent, 29.7 percent 21.9 percent and 7.8 percent

respectively. In this study the position of the respondents are very important as they are directly related to the study and they are provided necessary information used for the analysis and reporting.

Table 4.4 Respondents' position

Position	Frequency	Percent
Consultant	5	7.8
Contractor	26	40.6
Client	14	21.9
Regulatory auditors	19	29.7
Total	64	100.0

Source: primary source

4.2.5. Experience of the respondents

The other very important point raised here is that the experience of the respondents. This is because the experience is very important in the project performances. The following table indicates the experiences of the respondents.

Table4.5. Respondent experience

The number of project/s you are involved		
	Frequency	Percent
Less than 3	35	54.7
between 3 to 5	14	21.9
above 5	15	23.4
Total	64	100.0

Source: primary source

4.3. The Respondents reaction on the three project performance parameters.

4.3.1. The Project cost overrun

Table4.6. below shows how the respondents are replied to the problem of the project cost overrun in Bishoftu town cobblestone construction projects.

Problem of cost overrun

Problem of cost overrun	Frequency	Percent
NO	23	35.9
Yes	41	64.1
Total	64	100.0

Source: primary source

As indicated above by the respondents, the problem of cost overrun is the one of major factor that influenced project performance of Bishoftu town cobble stone construction which is shown in the result of the finding in the above table. From the total of 64 respondent 64.1 percent replied the existence of cost overrun in these projects whereas the remaining 35.9 respondent replied there is no cost overrun problem in Bishoftu town cobble stone construction. Thus, we can conclude that it would be critical to find better solution to mitigate on the matters related to cost overrun.

4.3.2. Project Quality

Since one of the major concerns of any project around the world focuses on its quality, this research has also taken it as one of its variable to evaluate soundness of the project in the town.

Table 4.7 below indicates the project quality problem

Quality problem

Description	Frequency	Percent
NO	16	25.0
Yes	48	75.0
Total	64	100.0

Source: primary source

Out of the total respondent of 64 respondents 75 percent of them respond the existence of quality problem and the rest of the respondent that means 25 percent of them replied there is no quality problem on cobble road projects of Bishoftu town. Thus, major emphasis should be given to quality problem in the town's cobble road construction and any appropriate corrective measures should be taken.

4.3.3. The Project schedule delay

Table 4.8 below indicates the project quality problem

Problem of project delay

	Frequency	Percent
NO	36	56.3
Yes	28	43.8
Total	64	100.0

Source: primary source

As indicated in the above table the problem of project delay is not at severe stage in Bishoftu town cobble stone road construction comparatively speaking. From the total of 64 respondents 43.8 of them replied there is project delay while 56.3 percent of the respondent replied there is no project delay problem in Bishoftu cobble stone construction projects. Accordingly, the review of secondary data supports the above facts that even though there are certain projects with negative schedule variance, majority of the projects are completed either on or within time.

4.4. Analysis of Cobblestone Project Performance from Secondary Sources

Here, in the review of the secondary data, that the cobblestone road construction projects were undertaken by the Bishoftu town municipality (BTM) starting from 2010 up to 2011 E.C from which ten projects among the all projects started in 2010 E.C. and 2011E.C were assessed. The discussions of selected 10 projects are here under.

Project 1 (BISHOFTU / ULGDP II /Bish/CW/12/21/2018)

This project is started on 21-MAR-18G.C and completed in 21-JUN-18 G.C in Keble 01 in the specific area, from W/RO Yimengushal Ayele wood work to Ato Nugus Senbetu which is 330M by carried out obsinate constructor. The contract amount of this project is Ethiopian Birr (ETB) 1,234,968.66 and completed by the price stated on the contract. The status of the project at the current is completed. This project does not have schedule/time variance as it was completed within the given time agreed in the contract that is 120 days. Hence, the project was both on time and as per agreed cost.

Project 2 (BISHOFTU / ULGDP II /Bish/CW/04/21/2018)

This project was started in the Kebele 01 from Ato Tullu Wedajo to Cattle Market with the distance of 300 meters with side drainage construction by Abreham, Hawi and Friends Contractors. The current project status is completed. The contractor agreed to construct project within 120 days starting from 21-Mar 18. Accordingly, the project was completed within the agreed time frame wok. On the other hand, the BTM agreed with the contractor by initial contract amount of 2,125,003.91 and the project was ended up with 2,251,041.92. The project consume more than the contract amount with cost overrun of ETB 126,038.01 or 5.93 percent. Moreover, lack of side drainage which lowers the quality of the project particularly during rainy season.

Project 3 (BISHOFTU / ULGDP II /Bish/CW/07/21/2018)

Here, the cobblestone project was constructed in the kebele 01 at the specific place from Ato Asaminew H/Mariam house to Meserete Kiristos and from Ato Atirfi house to Ato Sharif Ali house with a length of 380 meter by Genale contractor. The project is started in 29-March-2018 and finished by 29-June-2018 with no schedule variance. On the other hand, the project was incurred more budget by consuming more than the budgeted amount. The contract amount was 1,267,723.13 of ETB and it was completed in ETB 1,406,407.66. The cost overrun is ETB 138,684.53 or 10.94 percent. Therefore, this project was characterized as on the schedule and over budget even though the status of the project was completed as it has negative cost variance and no schedule variance.

Project 4 (BISHOFTU / ULGDP II /Bish/CW/09/21/2018)

This project was construction of cobble stone road at kebele 01 from Ato Taye Zawude house to back of Abba Gada Beyene Senbetu house fence with a distance of 263M by Obsa,Yadet and Friends contractor . Project was started in 21-March2018 with agreement to complete within 90 days and it is completed in 27July2018; and the contract amount is ETB 1,104,883.16 and completed with ETB 1,086,812.77. The project was consumed less cost by saving 1.9% or ETB 18,070.39 and had schedule delays of 36 days or 45.33%. The project has positive cost variance and negative schedule/time variance.

Project 5 (BISHOFTU / ULGDP II /Bish/CW/01/21/2018)

This project was construction of cobble stone road at kebele 01 fromW/ro shitaye megeresa house to Ato Zelalem Desta house and from Megenagna car training center to Ato Jemal Hasan house with a distance of 300m by Fenet, Samu'el and Yodit contractor. Project was started in 21-March2018 with agreement to complete within 90 days and it is completed in 21Jun2018; and the contract amount is ETB 1,397,865.96 and completed with ETB 1,396,617.54. The project has positive cost variance and completed on time

Project 6 (BISHOFTU / ULGDP II /Bish/CW/01/21/2018)

This project is started on 21-May-18 G.C and completed in 21-Jul-18 G.C in Kebele 01 in the specific area, from ato megersa feyisa house to ato asfaw kebede house which cover 330M and carried out by Jiruko constructor. The contract amount of this project is Ethiopian Birr (ETB) 639,059.27 and completed by the price stated on the contract. The status of the project at the current is completed. This project does not have schedule/time variance as it was completed within the given time agreed in the contract that is 90 days. Due to lack of right design, this cobble project faced problem of holding water during summer time which short it service life in addition to maintenance cost.

Project 7 (BISHOFTU/ *ULGDP/Bish/CW/CS/21/15/19*

This project was Cobble stone road with side Drain at Kebele 01 from Ms. Mekdes Hagos house turning at Mr. Tsegaye Abebawu house again turning at Mr. Tilahun Demissie house to Thirty meter Road with the contract amount of ETB 1,264,167.95 and completed with ETB 1,543,710.

This project was started in Feb15/2019 to be completed in April 19/2019. However; the project consumed extra 279,542.05 and 20 day negative schedule variance. Thus, the project has both negative cost and schedule variance compared to the contractual agreed time and cost.

Project 8 (BISHOFTU/ *ULGDP/Bish/CW/CS/24/13/19*

It was Cobble stone road at Kebele 01 from Mr Gedion Tekola house turning at Ms. Abeba Beyu house again turning at Ms. Mulu Negash house to Mr. Minawugawu Alemu house. Project was started in Aprl3/19 with agreement to complete within 90 days and it is completed in June 24/2019; and the contract amount is ETB 873,906.37 and completed with ETB 920.513.41. The project has negative cost variance and positive schedule/time variance.

Project 9 (BISHOFTU/ *ULGDP/Bish/CW/CS/32/15/19*

Like other projects we discussed above, this project also shares the same problem. The project started in Feb15/2019 with agreement of that the project will finish within 90 days. However, the project is ended in May7/2019 by consuming 122 days, and the time elapsed was 22 days or 18.03 percent. But the project saves costs of ETB 104,126.14 or 7.52 percent from which the initial contract amount was ETB 1,382,952.14 whereas project was finished with ETB 1,278,826. Therefore, the project has positive cost variance and negative schedule/time variance, and the project status is accomplished

Project 10 (BISHOFTU */ULGDP/Bish/CW/CS/42/15/19*

It was Coble stone road with side ditch at Kebele 09 from Firew Abdi house to Woineshet Mekkonin house & from Babogayya Asphalt to Abiyu Tsegaye house which cover 410 m distance. The project is started in March26/19and finished by June20/2019 with no schedule variance. The contract amount was 1,118,264.86 of ETB and it was completed in ETB 1,487,003.25. The cost variance is ETB 368738.39 or 32.97 percent. Therefore, this project was characterized as on the schedule and over budget even though the status of the project was completed as it has negative cost variance and no schedule variance.

To sum up, from selected ten projects for analysis, we see that the projects are incurred the problem of cost overrun, project delay, and project quality problems. Some projects indicate both negative cost and schedule variances others are experienced no cost variances but have behind schedule; likewise others are yet on schedule while others are over budgeted. Therefore,

it is the mandate or responsibility of concerned body to realize the project performance. Accordingly, project two, three, six and ten are consumed more than target cost. Project three, seven, five and ten are no cost overrun. On the other hand, project two, four, five, seven eight, nine have the problem of project schedule delays. Only project listed on number one is on both schedule and agreed amount of cost.

4.5. Analysis and Presentation of the results from primary data by using Relative importance Index

4.5.1. Project Management Related Factors

The respondent's lreaction on the project management related factors in the Bishoftu town cobblestone development projectas itis evaluatedby RIIis deciphered as follows. Granting of the contract tothe least bidderis stood atthe primary placewith RIIof 0.89 value.And followed by the absence of the project lmanagement involvement in RII of 0.834 value. These outcomes are corresponding with finding of the Peter and Evelyn (2015), iawarding project to llowest cost bidder brought about a circumstance that the real expense of the venture overwhelmedly surpasses the estimated costs. The project management familiarity and know howin the project implementation is key factorin assuring the project performance.The study, of Peter and Evelyn (2015), David, et al (2015) augmentthis finding.

Table 4.9.Project management-related factors of Bishoftu town cobblestone project.

Lists of factors	Scale						
	5	4	3	2	1	RII	Rank
Awarding ofcontractors tothelowest bidder	38	20	3	3	0	0.890	1
lackof top managementsupportforthe project	26	25	6	6	7	0.834	2
Lackof project management experience	20	34	7	2	1	0.818	3
Estimation is made without regard to the experience of the workers.	24	17	10	10	3	0.666	4
More emphasis is placed on keeping the team busy than onresults	29	13	6	9	7	0.75	5
Emphasis is placed on individual activitiesthan on project objectives.	20	19	11	13	1	0.737	6

Responsibilityof the project manageris unclear or undefined.	25	15	5	13	6	0.703	7
Top management does not participatein reviewing project plans & progress.	7	36	8	9	4	0.703	8
Managementwaits until near thecompletion date to Seeif theprojectis ontime	15	19	12	16	2	0.690	9
A poorly prepared proposal, WBS, responsibility matri x,or work role definitions	9	27	10	12	6	0.666	10

Source: primary source

11. To what extent do you rate the following factors affects project performance of Cobblestone construction projects of project-related factors?

4.5.2 .Project-Related Factors

Among the factors that influence the project ıperfomance of the Bishoftu town cobblestone construction activities of project related variables, poor utilization of software programming in project scheduling and planning, Lack of client contribution in defining venture scope, tasks, and requirements and absence of appropriate idrainage construction as it is strengthened by the finding of Saraf, (2013), and site condition issue upheld by the finding of Babu, (2015) are the most three significant elements with their RII of 0.672, 0.666, and 0.658 separately. As indicated by the response of the respondents and value of RII, Change in project ddesign, Site condition issues and muddled task scope definition are positioned on the last factors of undertaking related elements with their RII of 0.588, 0.572, and 0.544 individually. ultimately, the rest of the elements of project related components are in the middle of; to be specific, absence of creating project standard techniques (RII rises to 0.631), Lack of creating ıproject standard methods (RII rises to 0.631) for what it's worth in line to finding of Saraf (2013), Lack of iSufficient money to finance task (RII rises to 0.628), Complexity of project (RII rises to 0.606) Project exercises length inadequately evaluated, (0.588) are ıranked from fourth to seventh.

Table4.10. Project-related factors of Bishoftu town cobblestone project.

	Lists of factors	Scale						
		5	4	3	2	1	RII	Rank
1	Complexity of project	12	16	11	12	13	0.606	6
2	Lackof Sufficient fundto finance project	17	10	10	19	8	0.628	5

3	Lack of proper drainag construction	14	16	13	16	5	0.658	3
4	Site condition problems	9	8	19	21	7	0.572	9
5	Lack of user involvement in defining project s cope, tasks, and requirements	15	20	9	11	9	0.666	2
6	Lack of developing project standard procedures	13	17	10	15	9	0.631	4
7	Unclear project scope definition	9	8	16	18	13	0.544	10
8	Change in project design	11	10	15	18	10	0.581	8
9	Project activities duration poorly estimated	12	12	14	12	14	0.588	7
10	Poor use of computer software in project planni ng and schedule	15	18	10	17	4	0.672	1

Source: prim source: primary source

In the project management system, using of the computer software in project planning,controlling ,monitoring and generally,in every project activity is very important just as the respondents addressed in their response.This result is the same with that of Davidet al(2015).The other point that must be taken into accountisabout drainage construction. Drainage construction side by constru ction is very important in Bishoftu town as the location of the town is known by rainy weather condition.To maintain the qualityofthe constructed projectandto sustainitforthe long project life cycle,constructing the drainage with standard is advisable.Selection of appropriate constructio n site is also must be considered before construction is started.For instance, construction of cobble stone at the place where heavy trucks are continuously passed,the places that are not suitable for such construction mustbe checked before construction are running.The complexity of project nature that is positioned tenth level by the respondents is contradicted with the finding of the Ifedolapo (2016), asthey putit on the top persuasive factorinfluencing the project executionin their study;so it need further examination.

12. To what extent do you rate the following factors affects project performance of Cobblestone construction projects of **contractor-related factors**?

4.5.3. Contractor Related Factors

The result from table 4.11 underneath shows that all respondents agreed that the most significant contractor related factor that influence the project performance of Bishoftu town cobblestone construction is issue of cost ioverrun all things in line to the study of Babalola and Ojo (2016), Aftab, et al (2014), Melba et al (2015), Enshassi et al (2009), Peter and Evelyn (2015). The second

most compelling factor is absence good communication between the project members. This finding is similarly held by the study of Babalola and Ojo (2016). At third pointwehave Construction mistakesanddetective work.This takes to three factors because in construction sect orsthis factor consumemore time affectingthe schedule performance.This findingisthe similarto the studyof Babu (2015).The fourth factoris Delayinapproving paymentsof ompletedworks.

Table 4.11.Contractor related factorsof Bishoftutown cobblestoneproject

	Lists of factors	Scale						
		5	4	3	2	1	RII	Rank
	Contractor-related Factors							
1	Poor performanceof project cashflowanalysis	5	18	14	17	10	0.572	7
2	Shortageof labor force	5	18	14	17	10	0.572	5
3	Problem of Cost overrun	16	20	13	7	8	0.90	1
4	Delay in approving paymentsof completed Works	13	20	13	12	6	0.669	4
5	Site preparation time	7	6	13	20	18	0.488	9
6	Lackoflcommunicationlbetweenlthelprojectlparti cipants	21	17	10	12	4	0.722	2
7	Variationin scope	5	11	15	21	12	0.525	8
8	Startand finishdateare poorly approvedand fi	3	6	14	15	26	0.428	10
9	Project team leadernot committed to meet time, quality and cost	12	15	10	17	10	0.606	6
10	Construction mistakesand detectivework	16	18	13	11	6	0.684	3

Source: primary source

According to the above table, cost overrun is the main issueof the contractor related factors that contribute to the problem of project performance.This is also the reason that one of the factor resulted in the project delays.This result also in line with the awarding of the contractors to the lowest cost as it took first step in the project management related factors.In other words,the cost overrun problem is the result of awarding the bidding to the lowest bidder so that other unforeseen.Theother remaining contractor related factors that are affectingthe performanceof cobblestone in terms of quality, cost and project delays are: variation in scope; project team leader not committed to meet time, quality and cost; delay in approving payments of completed works that is in line to Babalola and Ojo (2016); start and finish date are poorly approved and

fixed; poor performance of project cash flow analysis and shortage of laborforce which is support ed by Saraf(2013) and Aftab (2014). Therefore, the project manager contractor and the owner of the project must work effectively to solve the problem of project performance.

13.To what extent do you rate the following factors affects project performance of Cobblestone construction projects of **clients/employees-related** factors?

4.5.4. Clients/Employees-Related Factors

Among the most compelling client related variables that influence the venture execution in the Bishoftu own cobblestone construction project that positioned the primary level is Client focus on speedy construction rather than quality with RII approaches 0.822). This factor, among others, is the most significant one. The customer focus on low construction cost with RII of 0.794 is the most influential factor positioned at the second level by the respondents in the Bishoftu town cobblestone development project. This is on the grounds that low construction cost might be appears to be prudent however on the off chance that there exists the heightening of the material costs, swelling and other uncontrollable factors, concentrating on the low contruction cost may bring about the venture delay since project workers acquire misfortunes, the nature of the undertaking may likewise not meet the task detail. Thus, consideration should give here since this factor is related with numerous components that influence the undertaking exhibitions. Different factors, for example, Poor arranging and planning (RII rises to 0.731), Low degree of data coordination (RII rises to 0.691), Lack of task programming in project the executives (RII approaches 0.659), Using organization's recorded information in evaluating exercises term and cost (RII rises to 0.656) , Client obstruction during development (RII rises to 0.562), Lack of regular gathering (RII rises to 0.553) and Delay in progress installment to contractual worker (RII rises to 0.506) showing the positions from fourth up tenth individually. Thus, due respect ought to be given to decrease of value issue because of Client focus on speedy construction rather than quality and cclient attention on low construction cost

Table 4.12 Client related factors of Bishoftu town cobblestone project

No	**Lists of factors**	Scale						
		5	4	3	2	1	RII	Ran
	Client/employees-related factors							
1	Poor planning and scheduling	19	26	5	10	4	0.731	4

2	Lack of frequent meeting	6	14	15	17	12	0.553	9
3	Low level of information coordination	20	17	7	12	8	0.691	5
4	Poor monitoring and control	23	21	7	6	7	0.747	3
5	Delay in progress payment to contractor	8	9	8	23	16	0.506	10
6	Lack of project software in project management	19	17	1	18	9	0.659	6
7	Client emphasis on quick construction instead of quality	30	23	4	2	5	0.822	1
8	Client emphasis on low construction cost	26	23	5	7	3	0.794	2
9	Client interference during construction	10	11	10	23	10	0.562	8
10	Using company's historical data in estimating activities duration and cost	16	19	6	13	10	0.656	7

Source: primary source

14. To what extent do you rate the following factors affects project of Cobblestoneconstruction projects of **material-related** factors?

4.5.5. Material-Related Factors

As it is observed from the accompanying table 4.13, the significant elements influencing Bishotu town cobble stone developmentof time, costand qualityare positionedas needs be.Heightening of material cost is positioned by the respondentsat the top level (RII rises to 0.862) since it has sway on the task costoverwhelm, thusthe postponementsof the undertaking.This finding isthe equivalent with the findingof the Babalolaand Ojo (2016), Melba et, al. (2015), Enshassi et al. (2009). Low nature of material choice (RII rises to 0.759) positioned at the subsequent level. This is positioned second level by the respondents indicating that the low nature of material utilized in the venture development would bring about the issue of the task quality and Project delay because of deficiency of material with RII of 0.816 at third level. The acceleration of material cost is straightforwardly identified with the cost overrun that we see under temporary worker related factors and granting the contractual worker to the most minimal bidder of the undertaking the executives related elements. This additionally infers acceleration of the material cost is the primary factors that influence venture quality, project postponements, and undertaking cost overwhelm in BTCCP. Other outstanding components, for example, absence of mindfulness about significance of material (RII rises to 0.494), all expenses are less considered in material arranging (buy costs, stacking and emptying costs, expansion costs) RII approaches 0.617 Poor instrument employments of material in venture with RII rises to 0.616 are positioned tenth, ninth

and eighth individually. The rest of the variables are additionally between the most reduced and most noteworthy elements that influence the venture execution. These variables incorporate Lack of project material administration framework (RII rises to 0.759), venture Risk related with inaccessibility and cost increment considered in material arranging is poor (RII rises to 0.738), Unavailability of material as planned through task span (RII rises to 0.616), poor recorded procedure for endorsement, checking and testing material (RII rises to 0.637.

Table4.13. Material-related factors of Bishoftu town cobblestone project

No	**Lists of factors**	Scale						
		5	4	3	2	1	RII	Rank
	Material-related factors							
1	Poor documented process for approval, checking and testing material	10	18	19	8	9	0.637	7
2	Lack of awareness about importance of material	5	13	7	21	18	0.494	10
3	Project delay due to shortage of material	24	28	7	3	2	0.816	3
4	All costs are less considered in material planning (purchase costs, loading and unloading costs, inflation costs)	11	15	17	10	11	0.617	9
5	Unavailability of material as planned through project duration	15	15	14	12	8	0.616	6
6	Risk associated with unavailability and cost increase considered in material planning is poor	20	17	16	9	2	0.738	5
7	Poor mechanism use of material in project	15	8	17	15	9	0.616	8
8	Lack of project material management system	20	22	14	5	3	0.759	4
9	Low quality of material selection	28	26	7	1	2	0.759	2
10	Escalation of material prices	33	23	3	5	0	0.862	1

Source: primary source

15. To what extent do you rate the following factors affects project of Cobblestone Construction projects of **Equipment-related** factors?

4.5.6. Equipment-Related Factors

Equipment related factors also affect the cobblestone projecta finding of the study indicates.Among the factors that ranked top three are Poor useof computer software in equipment planning and assigning, Low efficiency of equipment,and Poor planning for acquiring and using of project equipment with their respective RII equals 0.862,0.8and 0.816.According to the responden

ts respond the factors that slightly affect the cobblestone project performance of time, cost and qual ity were long, medium and short term equipment requirement prepared unwell, Lack of equipment policy/guide lines that guide acquisition, Delay of project due to shortage of equipment and Equip ment replacement decision based on actual performance, risk and economic analysis is poor with their relative importance index are 0.509,0.503, 0.484 and0.434 respectively.

Table 4.14. Equipment related factors of Bishoftu town cobblestone project

No	**Lists of factors**	Scale						
		5	4	3	2	1	RII	Rank
	Equipment-related factors							
1	Lack of awareness about importance of project Equipment management	21	20	14	5	4	0.753	5
2	Lack of equipment policy/guidelines that guide ac quisition, use and replace decision	4	9	14	26	11	0.503	8
3	Delay of project due to shortage of equipment	6	6	13	23	16	0.484	9
4	Quality of equipment is not assured	9	18	10	14	13	0.588	6
5	Poor planning for acquiring and using of l project lequ ipment	25	23	9	5	2	0.8	3
6	Poor use of computer software in equipment plann ing and assigning	30	21	10	3	0	0.862	1
7	Long, medium and short term equipment require ment prepared unwell	4	6	21	22	11	0.509	7
8	Poor equipment sharing among projects of the com pany	22	17	10	7	8	0.741	4
9	Equipment replacement decision based on actual p erformance, risk and economic analysis is poor.	5	8	8	16	26	0.434	10
10	Low efficiency of equipment	31	19	9	3	2	0.831	2

Source: primary source

16. To what extent do you rate the following factors affects project performance of Cobblestone construction projects of **External-related** factors?

4.5.7. External-Related Factors

The last independent factor that affects the Bishoftu town cobble stone construction projects which is not include in the above listed lists on l independent l variables is l external l factor. This external factor is summarized in the following table 4.15. As it was appeared in the table below Excessive bureaucratic condition is the most severe factor that influence the the Bishoftu town cobble construction projects and followed by corruption, difficult in weathe condition which

isaccordance with the findingsofBabu(2015), Low participation of local community, Problem of land acquisition and compensation,Wastes in construction site,Political concern rather than social and economic concern, Unforeseen site condition, environmental concerns and restriction and changes in laws and regulations.

Table4.15. External relatedfactorsofBishoftutown cobblestone project

No	**Lists of factors**	Scale						
		5	4	3	2	1	RII	Ran
	External-related factors							
1	Difficult in weather condition	20	24	9	8	3	0.756	3
2	Problem of land acquisition and compensation	9	23	12	16	15	0.653	5
3	Wastes in construction site	3	10	20	16	15	0.615	6
4	Unforeseen site condition	2	16	18	21	7	0.553	8
5	Corruption	43	15	2	3	1	0.88	2
6	Environmental concerns and restrictions	10	12	4	24	14	0.537	9
7	Excessive bureaucratic condition	46	10	2	6	0	0.9	1
8	Low participation of local community	13	24	6	11	10	0.703	4
9	Changes in laws and regulations	1	9	7	17	30	0.394	10
10	Political concern rather than social and economic concern	5	12	28	9	10	0.578	7

Source: primary source

CHAPTER FIVE

Conclusion and Recommendation

5.1. Introduction

This chapter explained the discussion of key findings, conclusion drawn from the findings and recommendation made regarding to the study. The conclusions and recommendations drawn were focused on addressing the objective of the study.

5.2. Summary of Finding

This study was done in Bishoftu town Cobblestone construction project that was under taken for the last two years starting from 2018.The study was about the factors affecting the project performance, that means the time performance, cost performance and quality performance in line with the seven independent factors/variables such as project management related factors, project related factors, client related factors, contractor related factors, material related factors, equipment related factors and external factors.The reviews of secondary data of selected 10 cobblestone projects were thoroughly examined to identify the project performance. As a result there exists the problem of project performance in the sector.The cause of the project failures were identified in the discussion of the seven basic independent variables.The target population of this study was client, contractor, consultant and regulatory auditor.Under each independent variable ten factors were distributed for respondents. Factors were analyzed and ranked by using RII to identify the most influential factors that affect the performance of the construction of the cobblestone projects. Accordingly, the most influential project management related factors that were ranked top two were awarding of the contractor to the lowest bidder with RII equals 0.890 and lack of project management experience with RII equals 0.818, which show that the project management experience was the crucial point in the maintaining the performance of the project. The most important top two factors of project related factors were poor use of computer software technology in the project implementation with RII equals 0.672, and Lack of user involvement in defining project scope, tasks, and requirements with RII equals 0.572. The use of computer software is very important in the project management system.

The contractor related factors are also among the factors that affect the project performance of the cobblestonein the Bishoftu town with the top two factors with RII equals 0.9 and 0.722 are problem of the cost overrun and lack of communication between project participants respectively. Like that

client related factors among others included under it, it contains top two factors with RII were client emphasis on quick construction instead of quality (0.822) and client emphasis on low construction cost (0.794).The material and equipment related factors like other factors also affect the performance of the cobblestone project in the Bishoftu town. Their top two influential factors were escalation of material price (RII equals 0.862) and low quality of material selection (RII equals 0.759); and low efficiency of equipment (RII equals 0.844) and poor use of computer software in equipment planning and assigning (RII equals 0.826) respectively.Finally,the external related factors that mostly affect the project performance of cobblestone construction in Bishoftu town were corruption, low participation of local community and difficult in weather condition with RII equals 0.882, 0.868 and 0.862 respectively.

5.3. Conclusion

The top ten factors that affect the cobblestone performance are awarding the contractor to the lowest bidder, poor use of compute r software in project planning and scheduling, Problem of Cost overrun, client emphasis on quick construction instead of quality, Corruption, Escalation of material price, excessive bureaucratic condition, lack of top management support for the project,Poor use of computer software in equipment planning and assigning, and Lack of project management experience.The documents were reviewed to triangulate the result more accurately. From the selected ten projects for analysis, we see that the projects are incurred the problem of cost overrun, project delay, and project quality problems. Some projects indicate both negative cost and schedule variances others are experienced no cost variances but are behind schedule; likewise others are yet on schedule while others are over budgeted. Therefore, it is themandate or responsibility of concerned body to realize the project performance. Generally, we conclude that both primar y and review of the documents indicate that the existence problem ofthe project perf ormance in the Bishoftu town cobblestone projects.

5.3. Recommendation

Fromthe finding of the study it was identified that the cobblestone projects in Bishoftu town experienced the project performance problems. Therefore, the following recommendations were suggested.

- The effective scheduling and planning in line with successful monitor and control among the project members, extending Construction of the cobblestone in the areas appropriate for their durability in order to keep up their quality,
- Critical evaluation of contractor before granting the contract to low cost bidders since it has negative impact on the completion of the project, result in cost overrun and the substa ndard project quality,
- Guarantee the involvement of the client in the implementation of the project,
- Use software programming innovation in all the parts of the project tasks,
- Fight against excessive bearucraticy which is the virus of every development program.
- Recruit experienced project administrator as much as possible to minimize the risk that will occur in that direction.
- Construction of the cobblestone projects in the areas of suitable for their durability so as to maintain their quality.

5.5. Suggestion for Future Research

Further study should be conducted in the factors affecting project performance in the construction industries in Bishoftu town regarding the project cost overrun, project schedule delays and proje ct quality both in the public and private construction sectors using inferenrtial stastitcs inorder to enhance generalizability of factor affecting the projects across the sector.

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Appendix A- Questionnaires

ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE STUDIES

COLLEGE COMMERCE MASTERS OF PROJECT MANAGEMENT

QUESTIONNAIRE

ON

FACTORS PROJECT : A CASE COBBLE STONE ROAD CONSTRUCTION PROJECTS IN BISHOFTU TOWN

BY: Akawak Endale

ADVISOR: Dr.Abdurezak Mohammed

FOR THE FULFILLMENT OF MA DEGREE IN PROJECT MANAGEMENT

APRIL, 2020

ADDIS ABABA, ETHIOPIA

QUESTIONNAIRE

Dear Sir

The researcher is a graduate student of MA in Project management Addis Ababa University. The requirement of the program is to come up with a research related the field of study.The aim of this questionnaire is to study the factors affecting project performance on cobblestone road construction projects in Bishoftu town. This questionnaire is required to be filled with exact relevant facts as much as possible. All data included in this questionnaire will be used only for academic research and will be strictly confidential.Your response, in this regard, is highly valuable and contributory to the outcome of the research.

Regards,

Akawak Endale

Post Graduate Student, Addis Ababa University, College of Commerce

Tel: 0917401085, E – mail: - akawakbaisa@gmil.com

April, 2020

Addis Ababa, Ethiopi

Part One: General information (Respondent Background): Respondents' Profile

Part One: General or Basic information about respondent and project

1. Kindly indicate your gender? Male [ ] Female [ ]

2. Respondents‟ Position in the firm:Consultant [ ] Contractor [ ] Client [ ] Regulatory auditor [ ]

3. Company Name (for contractor): ----------

4. Show your age bracket? 20 –29 years [ ] 30 –39 years [ ] 40-49 years [ ] above 50 years [ ]

5. How long have you been involved in the Construction projects? Less than 5 years [ ]between 5 to 10 years [ ] between 10-15years [ ] between 15-20 years [ ] above 20 years [ ]

6. Indicate the level of your education? Less than diploma [ ] Diploma [ ] Bachelor's degree [ ]Masters [ ] PHD [ ]

7. What is your responsibility in your organization? _____

8. The number of project/s you are involved? Less than 3 [ ] between 3 to 5 [ ] above 5

9. For the following listed project problem, if it exist in Bishoftu town cobblestone project fill the following table with a given options.

S/N	Problems	Options	
		Yes	No
1	Problem of cost overrun		
2	Quality problem		
3	Problem of project delay		

Part Two: Factors affecting cobblestone project Performance of Construction Projects (time, cost and quality factors)

Here there are lists of factors affecting performance of construction projects which are categorized into seven subcategories.Please put a tick mark in the appropriate column according to their degree of rank.

Where 5=very high, 4=high, 3=neutral, 2=low, 1=very low

10. To what extent do you rate the following factors affects project performance of Cobblestone construction projects of **project management-related** factors?

Table4.11. project management related factors of Bishoftu town cobblestone project

SN	Lists of Factors	Degree of rank				
	project management-related factors	5	4	3	2	1
1	Awardingof contractorsto the lowestbidder					
2	lackoftop management supportfor the project					
3	More emphasisis placedon keepingthe team busy thanonresults					
4	Responsibilityof theproject manageris unclearorundefined.					
5	Top management doesnot participatein reviewing projectplansand progress.					
6	Emphasisis placedon individual activitiesthanon project objectives.					
7	Lackof project management experience					
8	A poorlyprepared proposal,WBS, responsibility matrix, or work role definitions.					
9	Estimationis madewithout regardtothe experienceofthe workers.					
10	Management waitsuntilnear the completion dateto seeifthe projectison time					

11.To what extent doyou rate the following factors affects project performance of Cobblestone construction projectsof **project-related**factors?

Table 4.12. Project-related related factors of Bishoftu town cobblestone project

SN	Listsof Factors	Degree of rank				
	project-related factors	5	4	3	2	1
1	Complexity of project					
2	Lackof Sufficient fundto financeproject					
3	Lackof proper drainageconstruction					
4	Site condition problems					

5	Lackof userinvolvementin defining projectscope,tasks, and requirements.					
6	Lackof developing projectstandard procedures					
7	Unclear projectscope definition					
8	Changein projectdesign					
9	Project activities duration poorly estimated					
10	Pooruse of computersoftwarein project planningand schedule					

12. To what extent do you rate the following factors affects project performance of Cobblestone construction projects of **contractor-related factors**?

Table4.13.contractor-related factors of Bishoftu town cobblestone project

SN	Lists of Factors	Degree of rank				
	Contractor-related Factors	5	4	3	2	1
1	Poor performance of project cash flow analysis					
2	Shortage of labor force					
3	Problem of Cost overrun					
4	Delay in approving payments of completed works					
5	Site preparation time					
6	Lack of communication between the project participants					
7	Variation in scope					
8	Start and finish date are poorly approved and fixed					
9	Project team leader not committed to meet time, quality and cost					
10	Construction mistakes and detective work					

13. To what extent do you rate the following factors affects project performance of Cobblestone construction projectsof **clients/employees-related** factors?

Table4.14.clients/Employees related factorsofBishoftu towncobblestone project

SN	Lists of Factors	Degree of rank				
	Client/employees-related factors	5	4	3	2	1
1	Poor planningand scheduling					
2	Lackof frequent meeting					
3	Low levelof information coordination					
4	Poor monitoringandcontrol					
5	Delayin progress payment to contractor					
6	Lackof project softwarein project management					
7	Client emphasison quick construction insteadof quality					
8	Client emphasison low constructioncost					
9	Client interference during construction					
10	Using company‟shistorical datain estimating activitiesdurationandcost					

14. To what extent do your are the following factors affects project of Cobblestone construction projects of **material-related** factors?

Table4.15. Material related factors ofBishoftu town cobblestone project

SN	Lists of Factors	Degree of rank				
	Material-related factors	5	4	3	2	1
1	Poor documentedprocessfor approval, checkingand testingmaterial					
2	Lackof awarenessabout importanceof material					
3	Project delaydueto shortageofmaterial					
4	All costsare less consideredin materialplanning(purchase costs, loadingand unloadingcosts,inflation costs)					
5	Unavailabilityof materialasplanned through project duration					
6	Risk associatedwith unavailabilityandcost increaseconsidered in material planningis poor.					
7	Poor mechanismusesof materialinproject					
8	Lackof projectmaterial management system					

9	Low qualityofmaterial selection					
10	Escalationof material prices					

15.To what extent do you rate the following factors affects project of Cobblestone Construction projects of **Equipment-related** factors?

Table 4.16 equipment related factors of Bishoftu Town Cobblestone Project

SN	Lists of Factors	Degree of rank				
	Equipment-related factors	5	4	3	2	1
1	Lack ofawareness about importance of project equipment management					
2	Lack of equipment policy/guidelines that guide acquisition, use and replace decision					
3	Delayof project dueto shortage of equipment					
4	Quality of equipment is not assured					
5	Poor planning for acquiringand using of project equipment					
6	Poor use of computer software in equipment planning and assigning					
7	Long, medium and short term equipment requirement prepared unwell					
8	Poor equipment sharing among projectsof the company					
9	Equipment replacement decision basedon actual performance and economic analysis					
10	Low efficiency of equipment					

16. To what extent do you rate the following factors affects project performance ofCobblestone construction projects of **External-related** factors?

Table4.17. External related factors of Bishoftu town cobblestone project

SN	Lists of Factors	Degree of rank				
	External-related factors	5	4	3	2	1
1	Difficult in weather condition					
2	Problem of land acquisition and conmpensation					
3	Wastes in construction site					
4	Unforeseen site condition					
5	Corruption					
6	Environmental concerns and restrictions					
7	Eexcessive bureaucratic condition					
8	Low participation of local community					
9	Changes in laws and regulations					
10	Political cooncern rather than social and economic concern					