

**FACTORS AFFECTING TIMELY COMPLETION OF COM-  
MERCIAL PRIVATE BUILDING CONSTRUCTION PROJECTS:  
THE CASE OF JIMMA TOWN**



**A THESIS SUBMITTED TO JIMMA UNIVERSITY SCHOOL OF GRADUATE STUD-  
IES IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE MASTER OF  
ART'S DEGREE IN PROJECT MANAGEMENT AND FINANCE**

**BY**

**DEJENE DERESE**

**UNDER THE SUPERVISSION OF:**

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**JIMMA UNIVERSITY**

**COLLEGE OF BUSINESS AND ECONOMICS**

**DEPARTEMENT OF ACCOUNTING AND FINANCE**

**JULY 2020**

**JIMMA, ETHIOPIA**

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SCHOOL OF GRADUATE STUDIES  
M.A. IN PROJECT MANAGEMENT AND FINANCE**

**JULY, 2020**

**JIMMA, ETHIOPIA**

## Declaration

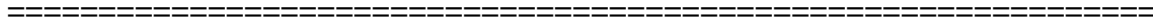
I, **Dejene Derese**, declare that this research Thesis entitled “*Factors Affecting Timely Completion of Commercial Private Building Construction Projects: The Case of Jimma Town*” is the outcome of my own effort as well as study and that all sources of materials used for the study have been duly acknowledged. I have produced it independently except for the guidance and suggestion of the Research Advisors. This study has not been submitted for any degree in this University or any other Universities. It is offered for the partial fulfillment of the Master of Arts Degree in Project Management and Finance (M.A).

**By: Dejene Derese**

Signature \_\_\_\_\_

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This is to certify that the thesis entitled “*Factors Affecting Timely Completion of Private Building Construction Projects: The Case of Jimma Town*” “submitted in partial fulfillment of the requirements for the Master of Arts Degree in Project Management and Finance (M.A), the Graduate Program in Business and Economics College, Department of Accounting and Finance by **Dejene Derese**, under our supervision. Therefore, we recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the Department of Accounting and Finance.

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We, the undersigned, members of the Board of Examiners of the final open defense by **Dejene Derese** have read and evaluated his/her thesis entitled “*Factors Affecting Timely Completion of Commercial Private Building Construction Projects: The Case of Jimma Town*”, and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirements for the **Master of Arts Degree in Project Management and Finance (M.A)**.

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## **Abbreviations & Acronyms**

ADKAR: A-awareness of the need for change,D-disire to support and participate in the change,K-knowledge of how to change,A-ability to implement the required skills and behavior,R-reinforciment to sustain change

NEPAD: New Partinership for African Development

NGO: Non Governmental Organization

PMI: Project Management Inistittion

UNCTD: United Nation Commission for Trade and Development.

## Abstract

*There are commercial private buildings construction project delays with in the stud areas as a result, this study aimed to empirically investigate factors that affect timely completion of commercial private building construction projects in Jimma town from six delay causing factors components namely: material related, equipment related, finance related, contractor related, client related and external related. A theoretical framework was used as a guideline to test the effect of these variables on timely project completion from the relevant literatures. The research methodology was questioner and interviewin data collectio process. Stratified sampling technique was employed and a questionnaire was distributed to a sample of 60respondents. However, only 54of the questionnaires were filled and returend and hence, the response rate was 90 percent. Besides, descriptive statistical tools like percentage and frequency were used to illustrate the demographic characteristics of the respondents and to assess the perception of respondents from data collected through questionnaire and the study revealed that majority of the respondents feel strongly agreed on those delay causing components. Thus, inferential statistical methods like correlation analysis was used to assess the relationship between delay causing factors and timely project completion, multiple linear regression analysis also was employed to examine factors affecting on timely project completion by using primary data collected through five point likert scale questionnaire. In the finding process; factors are positively correlated. such as: material( $r=.470$ ,  $p<0.01$ ) which is low relation ship, equipment which is modarete ( $r=.669$ ,  $p< 0.01$ ), finance ( $r=.507$ ,  $p< 0.01$ ) moodarete, contractor ( $r=.572$   $p< 0.01$ ) modarete relation ship, client ( $r=.775$ ,  $p<0.01$ ) high relationship and external ( $r= .381$ ,  $p< 0.01$ ) are low relation ship. I In multi regression results of this study 83.9% of R square implies change in variation of all six independent variable can eplain the study while the rest 16.1% can be explained by the unincluded variable. Again the result also shows adjusted R square of (0.818)some idea of how well the model generalize. The other one is (0.33775) of the standard error shows the measure of the variability of the multi correlation as much as this numerical. These shows the multi regression analsis resultsof all explanatory variables have significant effect on timely project completion. Therefore, owners, contractors, consultants & government should focus on those delay causing factors in minimizing & averting so as to achieve and maintain timely project completion.*

**Keywords:** *Factors, buildings, ontime*

# CHAPTER ONE

## INTRODUCTION

This chapter presents the background of the study, problem statement, objective of the study, research hypothesis, significance of the study, and scope of the study, structure of thesis, potential limitation, and organization of the study and research report information.

### 1.1. Background of the Study

Project can be viewed as temporary endeavor to create a unique product, service or result (SH Murith, S et al 2017). Schedule is an instrument which is important in communicating the work that is going to be performed by the use of organizational resources within the time framework in which that work needs to be performed (Ramya 2015). Time is the main important benchmark that is useful in determining project performance and organizational efficiency in the context of construction projects (Trauner 2009).

A project delay can be defined as an incident that causes an extension in the time for the completion of all or part of particular projects (D W M Chan & M M Kumaraswamy 2002). The delay can also be defined as the time overrun, either ahead of the date for the completion of the projects as specified by the contract or further than the extended contract period, where additional time has been granted, and (S Alkass, M Mazerolle & F Harris 1996).

According to Abdul Rahaman (2006) delay has many effects on projects. Such as, interruption of project works, loss of productivities, time related cost, third party claim, leaving the project as it is without completing (abandonment) and termination of the contracts. Even if construction projects are facing many problems now a day; delays are the basic problem in the construction project and on participating parties. In addition to the above mentioned effects of project delay; project failures and reduction of profit due to delays are among the basic effects of construction project.

According to Koushki et al (2005) among the common problems of the construction industry; delay is the most commonly known one that will affect the general purpose of the projects; whether it's pri-

vate or public construction projects. Sambasivan & Soon (2007) stated as delays in construction projects are not only local and regional issue but also, as it is the worldwide problem.

According to United UNCTD (2001) and (NEPAD) cited in Ramat Amina Docta (2017), Unpublished Master thesis University of Nairobi, Kenya; identified project delay as major problem and poor project time in Africa. For example, seven out of ten projects in Nigeria suffered delays during their execution (Jagboro & Ogunsemi 2006). So standing from these examples; at African level project delays are too higher than those on timely executed.

According to Ismeal (1996) report; delays are endemic to construction projects in Ethiopia. But, for this researcher Ismael exaggerated the magnitude of delay in cases of Ethiopia. He shouldn't select the word endemic. Because, as delays are common at worldwide as well as regional level and also in Ethiopia. So, it is preferable if it is substituted by the word usual.

Different authors tried to focus on causes of delay in various parts of the world. Such: as in Malaysia, Saud Arabia, Jordan, Kuwait, Hong Kong and, Thailand (Bellah 2015) as an example. According to the study of those countries delay causing factors have difference and similarity in each country. Because, it is obvious that causes of delays are not the same from country to country and from project to project as results of the nature of the projects.

In this study; identifying delay causing factors that affects on time completion of private building construction projects is very important. Because private building construction projects; are behind schedule as per this research with in the study area. According to Yang et al (2013) although schedule delays are common features in all construction projects the identification of the main causes of schedule delays and the implementation of actions that mitigate/prevent/ these delays in private building construction projects are fundamental concerns of this research.

This study addressed factors that affects commercial private building construction projects in Jimma town specially on those five kebeles' (Hermata Mentina, Ginjo Guduru, Bacho Bore, Awetu Mendera and Mendera Koch). The study identifies factors such as, material, equipment, finance client related, consultant and contractor related factors that affects on time completion of these construction projects. The reason for the selection of the kebeles are high magnitude of delay with respect to commercial private building construction projects with in the five kebeles and the six independent variables are the most common variables which were usual in causing of commercial private building construction projects. The rationality of this study aimed at clarifying causes, effects of delay to the user of this research and exploring means of mitigation on private building construction projects.

## **1.2. Statement of the problem**

According to global study of Ansar et al. (2016) from the study of 65 projects in rich Countries (Denmark, Germany, Japan, South Korea, Netherlands, Norway, Spain, Sweden, UK & USA) observed that an average time overrun was 42.7%. According to Chan & Kumaraswamy (1995) the study made between 1990 & 1993, in Hong Kong from 111 building and civil engineering projects; 25% of private building construction projects were only completed within schedule, while 75% of private buildings construction projects were time overrun.

Delay is not only the global issue but, it is also the problem at regional level. African is also the victim of construction project delays. For example, according to the research made by Elinwa and Joshua (2001) the occurrence of time overrun in Nigeria were between 80% and 90%. This implies that projects delay in this continent is high in magnitude.

Even though many study carried out from global up to local; most of them did not pay attention as to the private building construction projects and causes for delay on this specific sector. But, it is overt that as on time completion of private buildings construction have high contribution; as to the global, regional and national economy. Not only is this but also; on time completion is very important to avert the negative effects of delays on private building construction projects.

According to PMI (2010) completing projects on time is an indicator of efficiency in the construction industry. Even though many private buildings construction projects are started for constructing it, but the projects are facing problems of delay during the implementation within the study area.

Addressing those problems related to factors affecting timely completion of projects in general, and private building construction projects, in particular as paramount importance to different stakeholders such as: to aware the real factors that affect on time completion of the private building construction project in the study area for the users. Those users are project owners, business persons, government, NGOs and etc. The other importance of addressing the current problem is just to create awareness on the effect of private building construction project delay. Finally, the purpose of this study is to search mitigation mechanism of delay causing factors in private building construction projects.

The essence of this study is that; the researchers prior to this paper have not paid attention to this separate issue for private building construction projects rather, the previous studies made on the causes of project delay that focused on different areas of construction projects as well as other areas of projects than private building construction projects. For instance, Assessment of causes and impacts of local contractors time and cost performance in Ethiopian roads authority projects by (Rahel



Kasaye 2016), causes of delay in construction project of private real estate by (Adem Hussien 2018), major causes of project implementation delay the case of Development Bank of Ethiopia financed project by (Belay Teferra 2017), causes of delay in Public Building Construction project: A cases of Addis Abeba administration ,Ethiopia by (Abdurezak Mohammed Kuhil and Neway Seifu June 2019).

So long as the knowledge and understanding of the researcher there are commercial private buildings construction project delays with in the study areas. Based on this problem the researcher came across as the other researcher donot conducted on the area of commertial private building construction projects with in this area. This problem identification was made through observational survey primarily and from official repports additionally. Different country experienced different magnitude of project delay for example as per the global study of Ansar et al. (2006) ten rich world countries of commertial private building construction projects accounted 42.7% of projects were deayed.Again Nigeria was faced 80-90 commertial private construction project delay.So we can infer from these delays are usual from global upto local. This is the observed gap by the researcher; this research is expected to provide its own contribution by having conceptual and empirical evidence on factors affecting timely completion of private building construction projects.

To address above mentioned problem, this study, therefore, aims to provide a holistic view of various factors that affect timely completion of commertial sprivate building construction projects through a comprehensive review of literature and empirical study. Failing to complete the project on time causes private building construction projects extra costs, time overrun, dispute, arbitration, litigation and abandonment of the projects. These are the fundamental reasons that necessitated the researcher to focus on causes of delay with in the study area. So the researcher identified some factors that may frequently occur withinthe study area. Such as: material related, equipment related, finance related, contractor related, client related and external related factors.

### **1.3. Objective of the Study**

#### **1.3.1. General Objective**

The general objective of the study is to identify factors affecting on time completion of private building construction projects in Jimma town. And, hence, draw a significant and feasible suggestion based on the findings.

#### **1.3.2. Specific Objectives**

In line with the general objective; this study focuses on the following specific objectives

- i) This study identified material related factor to the on time completion of commercial private building construction projects within study area.
- ii) This paper Assessed equipment related factors to the on time completion of commercial private building construction projects within study area.
- iii) The researcher evaluated the finance related factors to the on time completion of commercial private building construction projects within study area.
- iv) This research assessed the contractor related factors to the on time completion of commercial private building construction projects within the study area.
- v) The study examined the client related factors to the on time completion of commercial private building construction projects within the study area.
- vi) This paper identified external; related factors to the on time completion of commercial private building construction projects within the study area.
- vii) This study showed means of minimizing commercial private building construction projects delay.

#### **1.4. Research Hypotheses**

A research hypothesis is a predictive statement, capable of being tested by scientific methods, that relates independent variables to some dependent variable (Kothari, 2004). It is a statement about the relationship between the dependent and the independent variables to be studied.

The development of the research model is based on the theoretical framework mentioned in the literature review, The null (**H<sub>01</sub>**) hypothesis are used under this study. Traditionally, the null hypothesis is assumed to be correct, until research demonstrates that the null hypothesis is incorrect (Mathers, Fox & Hunn 2007). Because, it does not have matter only using of **H<sub>01</sub>** which it can be going to be proved **H<sub>01</sub>** or disproved to **H<sub>1</sub>** using regression model.

**H<sub>01</sub>**- The material related factor has no statistically significant effect on timely completion of private building construction projects.

**H<sub>01</sub>**- The equipment related factor has no statistically significant effect on timely completion of private building construction projects.

**H<sub>01</sub>**-The finance related factor has no statistically significant effect on timely completion of private building construction projects.

**Ho<sub>1</sub>**- The contractor related factor has no statistically significant effect on timely completion of private building construction projects.

**Ho<sub>1</sub>**- The client related factor has no statistically significant effect on timely completion of private building construction projects.

**Ho<sub>1</sub>**- The external related factor has no statistically significant effect on timely completion of private building construction projects.

## **1.5. Significance of the Study**

The finding of the study is to assess and identify factors affecting timely completion of private building construction projects in Jimma town regarding with some identified kebeles. The study would highlighted potential areas for future research by providing a rational elaboration to the basic, but more detailed understanding of delay and associated challenges.

The study is at right position to give detail insight about the factors and effects of delay; it helps in minimizing the magnitude of the delay. The findings and the results of this study would provide valuable insights and more reliable guide for regional policy makers to improve project delay. Finally, it gives the members of the projects full awareness about the factors that causes delay towards project performance. Scholars may have interest for further inquire on the subject and to educational institutions: Other researchers who have an interest in the area may use this paper to fill the gap that they may observe. That means, they could use this paper to investigate further issue in the subject area or to investigate facts to establish, or further revise a theory. Researchers may again adopt this research outcome to build a plan of action based on the facts discovered. In general, the research potentially serves as a stepping stone for further research in the area.

## **1.6. Scope of the study**

The study is limited to private commercial building construction projects. This research is limited to Jimma town on five kebeles because majority of private building construction projects were delayed here in these kebeles and also there were financial, time and resource limitation to address the whole kebeles. Namely Hermata Mendera, Ginjo Guduru, Bacho Bore, and Awetu Mendera as well as Mendera Kochi. The group of respondent to this research is to contractors, consultants, owners'/owners' representatives' / & the leader of Jimma town construction office. This study is basically limited to six independent variables of factors affecting timely completion of private building con-

struction projects. Such as: (material, equipment, finance, contractor, client & external related factors) and one dependent (timely project completion) within the particular study area.

### **1.7. Limitations of the Study**

This study faced different limitations within the study area. Such as: finance, time and resource constraint. In addition to finance, time & resource constraint; this study faced constraints within the selected study areas. Such as: a few respondents could not have provided adequate information on time; a few respondents had provided inaccurate information and some respondent could not return the questionnaire even after several follow ups. Some respondent had provided inaccurate information.

In order to solve constraint regarding with finance and resource; the researcher got supports from other people in money as well as resource in kinds and also time relate limitation; specially due to corona virus it was very difficult to get respondents at work place; in which this limitation was curbed using my friend in distributing and collecting data. Under this study the researcher took some measurements in order to solve problem related to this potential limitation. Such as, in case of those respondents who could not provide information on time; the researcher collected the filled data through walking and phone calling. The other action taken in relation to a few respondents who could not provide accurate information as well as could not return questionnaire. The researcher reduced the amount of sample size by that much.

### **1.9. Organization of the Study**

Chapter one presents the introduction part; which include background of the study, problem statement, objective of the study, research hypothesis, significance of the study, scope of the study, structure of thesis, potential limitation, organization of the study and research report information.

Under chapter two there are two sections: section one deals about relevant theories that have relationship with this study such as; contingency theory, general system theory, ADKAR model and utility theory. Section two of the chapter have: empirical study analysis such as, concept on delay, effects of delay, types of delay, causes of delay, mitigation of delay, summary of literatures, literatures relationship with this study, literatures gap and the new finding of this study, similarity of literatures and their difference and conceptual framework.

Chapter three consists description of the study area, scope on the research methodology, research approach, research design, research methodology, scope, source & technique of data collection, data collection procedure, target population & sampling, sample design, sample size, sample technique, meth-

od of data collection &presentation, researchmodels, variabledefinition, validity&reliability test as well as ethical considaretion.

Chapter four consists demographic information, response rate, and respondent perception, inferential analyss, multiple liner regression analsis, effects of factors on timely project completion, coefficients of regression alaysis, analysis of variance, hypothesis testing and discussion as well as qualitative analysis & lastly chapter five have summary of findings, conclusion, recommendation and suggestion for further research.

## CHAPTER TWO

### RELATED OF REVIEW LITRETURE

This chapter; focused on related review of literatures on the factors affecting timely completion of commercial private building construction projects that is pillar for this study with the objectives in assessing six independent variables (material, equipment, finance, contractor,client, mitigation of delay,external related factors and one dependent variable (timely project completion). Section one deals with relevant theory which is applicaple for delay. Such as: contingency theory, general system theory and ADKAR model change. Section two tells about empirical study analysis.uch as :(concepts, effects, types, mitigation, summary of literature, literatures' relationship with this study, literatures gap and the new findings of this study, similarity of literatures and their differences and lastly conceptual frame work).

#### 2.1. Theoretical Litretures

For this study all of the theory could be used accourdingly for example contingency theory applied when the situation are deviated from the normality.Such as: the nature of the organizational structure, the technology we are using, different cultures, cost strategy.The other theory that were base for this study is general ytem theory in which the combination of all stem or parts were essential averting or reducing project delay.Lastly ADKAR model of change in which non reacting to the changes due to lack of knowledge,skill ad etc can resut project delay.

##### 2.1.1. Contingency theory

For this theory the situation and responses should taken into consideration in order to determine the nature of the situation accordingly. Since, projects are unique and complex by their nature; that need management attention according to its characteristics and environment of that occasion (Sawega 2015).

Contingency theory recognizes these situations in order to identify practices that can give solution for different projects and realizing project needs. According to this theory project management can be determined case to case, which mean that managing project do not have definite formula, because the situation makes how to vary the management system. Accordig to Mutema (2003) giving management decision require the relationship between organization and its environment at all.

So effectively applying this theory help project managers how to avert project uncertainties. For this theory different factors can affect projects differently. For example: the nature of the organizational

structure, the technology we are using, different cultures, cost strategy we followed and etc. According to S H Murithi\*, S et al. (2017) contingency theory have pivotal role in providing the project manager with project schedule; through properly estimating the project completion time in order to minimize time overrun.

### **2.1.2. General Systems Theory**

According to system theory the combination of all parts of unified can realize the objectives of this thought. According to S H Murithi\*, S et al. (2017) if one part of the system is removed, the nature of the system is changed as well. For example, a functioning car is a system if you remove the carburetor you no longer have a working car. If one part of the system is removed, the nature of the system is changed as well.

Projects are simply an integrated system that consists of inputs, process and output. So this will imply that missing of some or one parts of the system affects project success or completion. To generalize this theory there should be integration and harmonization among project stakeholders. According to S H Murithi\*, et al. (2017) an improvement method indicate that;the failure of different project member on the works of the projects can affecton time completion of the projects.

### **2.1. 3.The ADKAR model of change**

This theory tells us how projects can be fail. For this theory project can be fail if any change happened to our project and if any project stakeholders are not enough to response or resist the changes accordingly (Sawega2015). For example, these project failures might be emanating from the change of extensive knowledge, failure to learn new skills, unable to responding different behaviors. Under this context whenever there is a change; project team, employee or project manager should react to the change accordingly to avert project failure& to make it the project on time completion.

## **2.2. Empirical Literature**

### **2.2.1. Concepts of delay**

According to Kang sikwei (2010) & pickavance Keith (2005) the word delay defined as the act done by deviating from plan, expectation as well as if not according to the date specified in the contract or when the project is completed out of the date specified in the contract; mostly between the parties in to the contract for the delivery of the projects.

According; to Fung I W H, L T (2006) delay defined as the slowly working or constructing without interrupting the activities of projects.Generally that slow working results project time overrun beyond the date specified in the contract; whether in the original contract or the amended one. Not only this

but also Aibinu, A A& G O Jagbaro (2002) defined delay similarly; which mean that it is all about time overrun beyond the date specified in the original contract or beyond the date of verified contract.

According to Aibinu & Jagboro (2002) delay described as a when project owner and contractor play pivotal role as to the non –completion of the projects either jointly or severally as per the date of original or modified contract. Delay was defined as any situation or events that can hinder the projects how not to be complete project works as specified in the contract and which can take additional time or days to accomplish project works out of the days specified in the contract (Zack, 2003).

Abd Majid (1997) defined delays as the time overrun beyond the contract date or beyond the date that the critical activities have been delayed. For Majid (1997) delay was defined a loss of time. This means that when the project time is left behind; the completion of the project cannot be according to the original al schedule of the projects.

### **2.2.2. Effects of delay**

The effects of construction projects delays are wide in scope. Because it is not only limited to construction sector but also it can affect the overall national economy. According to Gonzalez et al. (2013) the effects of delay usually result cost overrun and hindering the economic growth. Not only this but also, Sambasivam et al.(2007) tried to identify the effects of delay into six categories. Such as: dispute, arbitration, litigation, abandonment, cost overrun.

B P Sunjka and U Jacob (2013) studied the effects of construction delay on projects in the Niger delta region of Nigeria. According to this author effects of delay were identified into seven categories. Such as, time overrun, budget overrun, poor quality of completed project, bad public relations, arbitration, total abandonment and litigation dispute and claims.

As per the study regarding with the causes, effects and minimization of construction projects' delay; shows that time overrun and cost overrun are the most and commonly known effects of construction project delay (Divya et al. 2015). According to Abdul Rahaman (2016) the effects of delay identified as follow: such as, disruption of works, loss of productivity, late completion of projects, increased time related cost, third party claims and termination of contract.

### **2.2.3. Types of delay**

Basically, there are four types of delays. Such as: critical or non critical, Excusable or non excusable, compassable or non compensable and current or noncurrent.

## **1. Critical or Non-Critical Delays**



Critical delay is a delay that can affect the completion of projects or in another situation it is simply the milestone date that can be considered as critical delays. Non-critical delays are; delays that do not affect completion of projects or a milestone date. If critical activities are delayed the completion of the project or milestone date would be delayed. Project completion date can be determined based on the following activities, such as, - the nature of the project itself, the contractor's plan and schedule (particularly the critical path), the requirement of the contract for sequence, the physical constraint of the project, i.e. How to build the job from a practical perspective (Dinakar 2014)

## **2. Excusable or Non-Excusable delays**

An event that is under the control of the contractor's is the non-excusable delay or that is foreseeable. There are some instances as to the non-excusable delays. Such as, fault made by the contractor, let performance by sub-contractor, ultimately let performance by suppliers, unfair labor strike as well as causing labor practices. According to Ahmed (2017) excusable delay is an act or event which is within the controlling capacity of the owner or contractors. According to Sardic & Selih (2015) there are some examples of excusable delay such as, weather conditions, acts of God and other unforeseeable future events.

## **3. Compensable or Non-Compensable Delays**

Compensable delay can be come to the picture when the risks of event arise due to the fault of employer which contractor entitled to get compensation with respect to direct and indirect time related costs (Keane & Caletka 2008).

## **4. Concurrent or Non-concurrent parallel delays**

Concurrent delay can be viewed when there are two or more than two events happened within the given period of time independently. Concurrent delays can be occurring due to the fact that when one delay risk might be arising from the side of employer and the other events of risk are from the side of the contractor and when the effects of delays are occurring at the same time from each side. When the occurrence of delay arises at different time and their effects are in whole or part at the same time; it will be called "concurrent effects" of sequential delay events (Keane et al.2008).

### **2.2.4. Causes of delay**

According to the suggestion made by the Kumaraswamy and Chan (1997) causes of construction delay in Hong Kong of china were due to the biases of different industry group which may directly result as to the delays in other group of industry. According to N Hamzaha et al. (2011) things should have

to be done according to their order. If the order of an activity is missed there is high chance of delay and des agreement.

According to Abdella & Hussien (2002) and other researcher causes of delays are identify as follow. Client related factors including finance and payment of completed work, owner interference, slow decision making and unrealistic contract duration imposed by owners.

Contractor related factors delay includes mistake during construction of the project, improper planning of the project, in adequate experience of the contractor, following improper method, delay caused by the sub contractors. Delays caused by sub contractor are among the delay that categorized under the contractor related factor. Because contractors; are responsible for the acts of sub contractors.

Consultant related factor is the other cause of project delay; which includes preparation and approval of drawings, contract management, quality assurance/control, lack of experience on the part of consultant site staff, poor communication and coordination, lack of experience on the part of consultant site staff, poor communication and coordination, absences of consultant site staff and long waiting time for approval of major changes in the scope of work. Material related factor is the other causes for delay including quality and shortage. Again labor and equipment factors include labor supply, labor productivity, equipment availability and failure.

The other cause of project delay can be external factors which include poor site condition, delay in manufacturing building material, weather condition, changes in regulations, problems with neighbors and site conditions, transportation delay, lack of material on the market, lack of instrument and tools on the market. An effective means of “learning from experience” on projects, that combines explicit knowledge with tacit knowledge in a way that encourages people to learn and to embed that learning into continuous improvement of project management processes and practices.

### **2.2.5 Internal delay factors**

Accourding to CERPA, N (2009) internal delay factors are simply the delay that can be arised as result of stakeholders in the projects or the delay that emanated due to the fault or intentionally from beneficiary of the projects. That can be caused by the project owners, owners’ representatives’, consutants, contractors and laborours. Such as: poor site management, poor supervision, improper planning, slow decision making, incompetient project team member, lack of communication as well as coordination & etc.

### **2.2.6 External delay factors**

According to Cleland, D I (1999) external delay factors are simply the delay that arised due to the fault, unforcen, uncontrollable or malpractices of the third parties that can be the government and any external factors. Such as: price escalation, acts of God, problem with government regulation, neighbors related factors, existence of high interest rate, weather conditions and etc.

### **2.2.7 Private construction reality in international experience**

IN Middle East many problem explicated causes of delay that faced the private construction projects. For example in Kuwait the main cause for private construction projects ware change orders, shortage of finance, client lack of exprinces, material related problems, and weather related probems (Koushki et al 2005). As per the study from Africa Egypt is also experienced reality of private construction project delay as result of desig problem, resource problem, experience problem, management problem, unforceen condition, mistake of work (Marzouk Mohamed 2008). In Easter province of Soud Arabia change orders, delay in progress payment, in effective planning and scheduling, poor site management and supervision, difficulties in financing (Assaf Saadi and Al-Hejji Sadiq 2006).

### **2.2.8 Private construction experience in Ethiopia**

In Ethiopia the private constructon experience were based on different factors. For any private construction projects up grading the project performance are one of the basic objectives. This can be achieved by finishing projects on time and schedule. Private construction projects Ethiopia are parts of the countries development. According to Worku Koshe and Jha (2016) in Ethiopia after the critical review of litretures related to private construction projects eighty eight factors were identified under eight broad categories many external external related factors, equipment related factors, labor related factors, desighner related factors, contractor related factors, consultant/super vision/ related factors and client reated factors.

### **2.2.9 Mitigation of construction project delay**

It is very important that in identifying and minimizing causes of construction project delays. This study will focus on explaining the causes of delay in private building construction projects and mitigating delays in construction projects. According to A A Aibinu & GO Jagboro (2002) the causes of delays needs to be investigated with fresh style to mitigate the causes of delay to ensure that projects are delivered on time.

Many researchers were identified and recommended method of delay minimization in construction projects. According to Chan and Kumarasamy (1997) time overrun would require delay minimiza-

tion. Through strong management teams, through investigation of site conditions, through controlling design of groundwork and foundations, through developing construction system linking all project teams was the significant way to mitigate this matter.

According to the research conducted on the effect of project delivery in Nigeria. There are two methods of minimizing delays to eliminate time overrun: such as, focusing on site activities and contingency allowance are the methods identified Aibinu and Jagboro (2002).

There are situation to reduce delays that recommended in Jordan by Odeh and Battaineh (2002).that are through enforcing liquidated damage clauses, offering incentives for early completion; developing human resources through proper training; adopting a new approach to contract award procedure by giving less weight to prices and more weight to the capabilities and using experienced contractor; and adopting new approaches to contracting, such as design-build and construction management types of contracts.

According to Ahmed et al. (2002) they recommended minimizing of delay in building permit process in Florida State to the extent of it is possible. This can be realized through incomplete and fault specification, through controlling change order, through proper design management and making best decision on time issue.

According to Abdul-Rahman et al.(2006) in order to minimize delay; the contractor should identify the best procedures of the construction. According to their study and recommendation; following the best procedure can increase productivity. Through: working overtime by shift and by asking extension of time. According to these authors to solve problems related to shortage of resource; it is advisable to reschedule an activity within available resources, using skilled labors and by using subcontractors.

#### **2.2.10 Summary of Literatures**

Under this research many literatures are defined in detail. The first section of this chapter deals with the theoretical literature that would support the study. Such theories are contingency theory (according to this theory the response to the situation should taken into consideration to avert or mitigate timely project completion. eg.the technology we are using, considering different cultures, allowing reduction cost strategy); general system theory (according to this theory the absences of integrated system or combination of all parts results project delay); ADKAR Model of change theory (according to this theory to solve delay related problem stakeholders should be capable enough to react, response or resist changes to the projects).

Concepts of delay have been mentioned under this chapter by different authors. So, delays are extended time beyond the period specified in the original contract or verified contract. The other idea with respect to this chapter is effects of delay that are categorized differently by many authors, but the classifications are generalized here as follows, such as: Affect public relation, increase time related cost, results termination of contract, late completion of projects, loss of productivity, interruption of works, results dispute, arbitration, litigation & abandonments.

The other points under this chapter are types of delay, such as: critical-non critical (critical delay can be happened when completion of projects or mile stone date were affected and non critical delay be arises with out the negative effects of mile stone date or it can be arises not due to the the delay of activity on the critical path); excusable non excusable (excusable delays are a delay that arises due to an act or event which is beyond the controlling capacity of owners or contractors while non excusable delays are a delays that arises due to an act or event that is foreseeable or controllable by contractor or owner); compensable-non compensable (Compensable delays are a delay which can be arises due to the faults of employers that contractor require compensation for what contractor incur due to time related cost while non compensable delays are a delay that arises due to the faults of the contractor him self); & concurrent-non parallel delays (Concurrent delay are a risk of delay that arises both from the side of contractor or owner while non concurrent delay are a risk delay that arises not from both side of contractor or owner).

Causes of delays are justified and categorized by different authors differently. This researcher tried to summarize as follows: it can be happen when there is missing order of an activity which can result high chance of delay; when biases imposed by some industry group on other group which can result delay directly or indirectly. Others are classified delay causing factors, such as: material related factors, client related factors, contractor related factors, consultant & external.

Mitigations of construction project delays have been discussed and listed by different authors. It is all about reducing the magnitude of time overrun in construction projects through: strong team management; investigation of site condition; controlling design of ground work as well as foundation; developing construction linkage; enforcing liquidated damage clauses; offering incentive for early completion; developing human resource using training; adopting new approach to contract award procedures by giving less weight to prices as well as more weight to capabilities and using experienced contractor; in identifying fault; by controlling change order; applying proper design management; giving best decision; following best construction procedures; working over time; rescheduling an activity with in available resources; by using skilled labor.

### **2.2.11 Literatures' relationship with this study**

Basically, there are some lists but not last about the literatures relationship with this study.

- Primarily literatures and this research identified the rooted problem to do the study.
- Literatures and this study have common ground in defining concepts of delay. Because, without knowing terminological definition it is nothing to go through the study.
- Literatures and this study have necessitated in making study on these construction sector due to delays harm effect on construction projects. According to the literatures delay on construction project have negative effects in construction industry as well as national economy and also delay have similar effects on private building construction projects.
- Most of the literatures have relationship with this study. The findings of those literatures were to address those factors that cause construction project delay. While this study is also focusing on the factors that causes private building construction project. So, in a scene literatures and this study have a common relationship in finding causes of construction project delay.
- Literatures in this research aimed at giving solution through reducing delay. This means that the effect of delay in most cases would have negative effects to the entire project and to the national economy. That is why literatures as well as this research focused to state solution for the means to mitigate the magnitude of delay in their specific concern of their study in the construction projects.

### **2.2.12 Literature gap and the new findings of this study**

All of the literature that I came across could not address the causes of delay regarding commercial private building construction project, this means that; so long as my knowledge goes delays on the private building construction project do not get attention from many researchers, unlike public building construction project within the study area. But private building would have lion share in the construction industry as well as in economy of this country.

This research is expected to give its own contribution by having conceptual and empirical evidence on factors affecting timely completion of private building construction projects through providing research ideas that are helpful in order to reduce the magnitude of private building construction project delay. Therefore, the aims of the study are all about focusing on six basic independent factors and one dependent variable. Such as: (material related, equipment related, finance related, contractor related, client related & external related factors) and dependent variable (timely project completion) through a comprehensive review of literature and empirical study.

### **2.2.13 Similarity of Literatures and their differences**

Under this study many literatures are similar in theoretical and empirical literatures. In cases of theoretical literatures all of them deal with delay causing factors from their own perspectives. Generally, the basic similarities of empirical literatures are with regard to time specified in the contract. Because, each element of empirical literatures; such as (concepts, effects, types, causes & mitigation) came to the picture as a result of lapsing time provided in contract before completing projects. The other similarities of empirical literatures are all about giving awareness about project delay.

Literatures are not only left with similarities rather they have also differences. According to contingency theory project depends on situation while general system theory tells us the absence of integrated system or combination of all parts results in project delay and according to ADKAR model change theory if stakeholders cannot react to the change happened to the projects; delay can occur. In cases of empirical literatures concepts of delay are all about defining the word delay in which it includes the lapsing period of either original or varied time in contract. But this study does not agree with the verified time in contract. Because the verification needs another cost, another time, additional resources and etc. So for this study it is advisable in proper project time estimation than verification. The other points are discussion and classification of delays deals with negative impacts that projects may face as a result of these effects; again types of delay deals with the condition in which delay can be categorized and finally mitigation of delay are all about following the strategy that is advisable in order to reduce the magnitude of project delay.

### **Conceptual Framework**

The purpose of this part is in order to conclude about the previous literatures regarding delays, causes of delay and their contribution for this study. The general idea from the previous literature shows that as there is the relationship between causes of delay and construction project delay and also effects of delay. The relationship between delay causing factors and private building construction project are tried to be shown in Figure 1 below

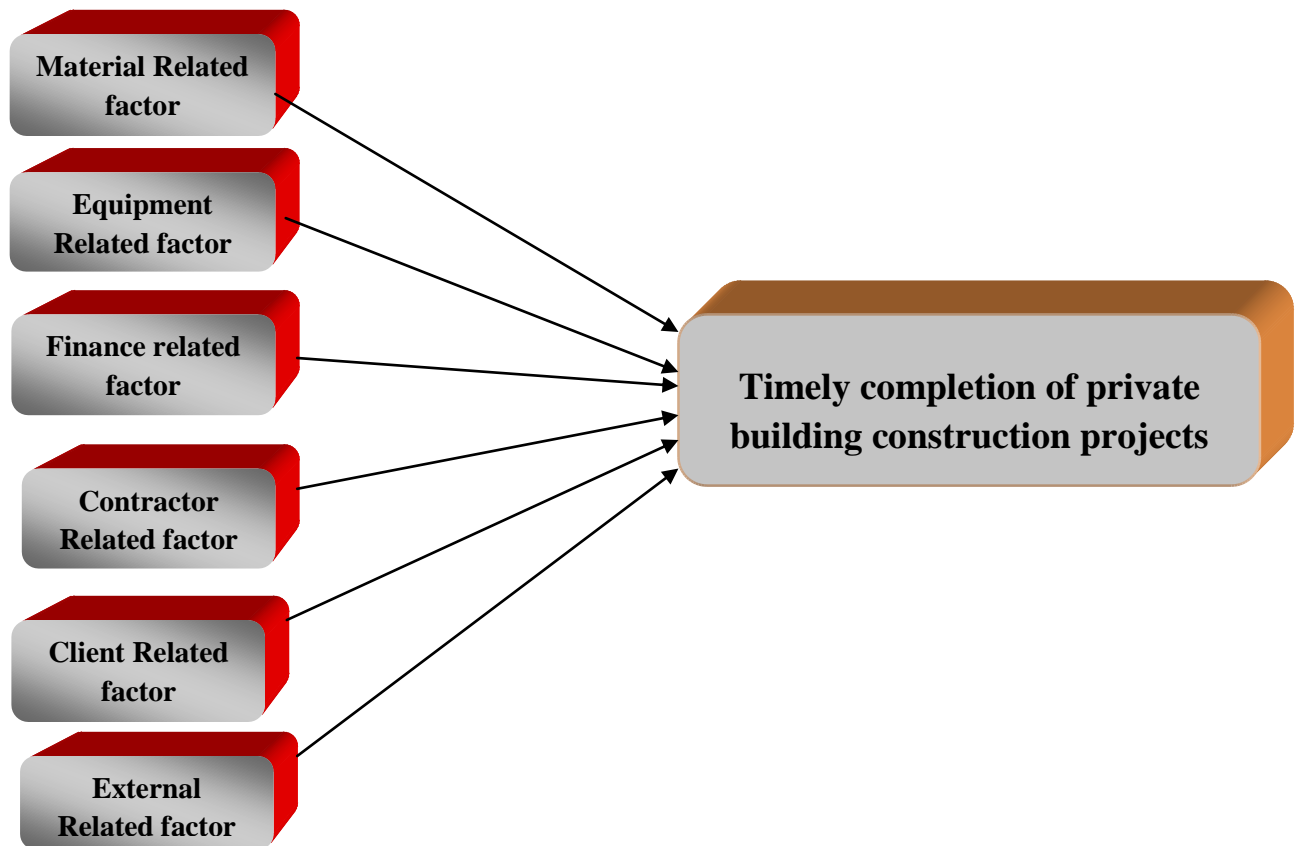
According to Sawega (2014) a conceptual framework is a diagrammatical representation of relationship between independent and dependent variables of the study. From the relationship between construction delay and delay causing factors can be conceptualized at a fairly general level, depicted in Figure 1 as two stage relationships where a set of causal factors are categorized based by the responsible body which in turn determine the outcome in terms of effects of delay in construction. The framework is developed from works of two different authors. Abdella et al.(2002) who categorized delay causing factors in eight groups and Sambasivam et al.(2007) that identified six effects of delay.

Thus, the present study would have six independent variables. Such as; material related, equipment related, finance related, contractor related, client related, external related factors and one dependent variable; i.e. (timely completion of private building construction projects). The proposed framework contains six hypotheses were tested in determining the relationship between the variables.



## 1. Conceptual Framework / Conceptual Model

**Independent Variable**    **Dependent variable measured by the time specified in the agreement**



**Figure 1:** Conceptual Frameworks / Conceptual Model

Source: Adopted from Addo J. N. T. (2015), and modified by the researcher of 2020 for this study.

# **CHAPTER THREE**

## **RESEARCH DESIGN AND METHODOLOGY**

This research describes the scope on the research methodology, research approach, research design, research methodology, types, source and techniques of data collection, data collection procedure, target population, sample design, method of data analysis and presentation, variable definition, validity and reliability tests as well as ethical considerations.

### **3.1. Description of the study area**

The study was conducted in Oromia regional state Jimma zone particularly in Jimma town. Jimma zone is found in the South western part of Ethiopia that is located at a distance of 362 Km far from Addis Ababa. The study was focused on five kebeles' of the town, namely Hermata Mendera, Gijo Guduru, Bacho Bore, Awetu Mendera & Mendera Koci regarding with factors affecting timely completion of private building construction projects. Because these areas have many private building construction projects as well as there are delays of private building construction projects in these areas or kebeles; Jimma town construction office report (2019). That is why the researcher selected those kebeles with in the town.

### **3.2. Scope on research methodology**

This chapter of the study covers the methodology that was applied in carrying out of the research projects. These methodologies are structured within the following topics. Such as: research design, research approach, target population & sampling method (sample size determination, sampling technique, method of data analysis & presentation), sampling design, type, source and data collection technique, data collection procedures, pilot testing, models (multiple linear regression & correlation) data processing and analysis as well as ethical consideration.

### **3.3. Research approach**

In this study both quantitative and qualitative research approaches were used. In cases of quantitative research approach, it was framed in terms of using number. Both were used to collect and analyze data in study area. In this study quantitative research approach was used for data collection through; self administered questioner. The study's problem was more likely to be answer through quantitative approach. Despite this, under this study the researcher was combined both qualitative and quantitative

tive approaches in order to reduce the limitations and increase the quality and flexibility of the data (Robinson, 1998).

This study was predominantly used quantitative data through distributing questioner which is numerical response using five point likert scale. It also used qualitative as supplementary for the quantitative data. The qualitative data were applied to analyze using content analysis based on the interview taken through discussion with out using numerical data. Such as; through the way of good judgment, examining, comparing and contrasting, and interpreting through meaning full patterns or themes of independent and dependant variables from data (Miles and Huberman, 1994 cited in sawega 2015). Meaning fullness of qualitative approach would have been determined by the particular objectives of the research. It focused on describing the theoretical aspects of the transcript data.

### **3.4. Research Design**

Research design is a comprehensive plan for data collection in an empirical research paper. It is a blue print for empirical research aiming at assuring specific research questions or testing specific hypothesis (Bhattacharjee, 2012). In other words, it is a master plan specifying the methods and procedures for collecting and analyzing the needed information. It ensures that the study would be relevant to the problem and that it uses economical procedures.

The types of research design that employed under this study were descriptive and explanatory research. The major purpose of descriptive research is description of the state of affairs as it exists at present. Then this study describes and critically assesses the factors affecting timely completion of private building construction projects in the study areas.

Descriptive analysis refers to the transformation of raw data into a form that will make them easy to understand and interpret. The types of research design that would have been effective under this study were through calculating of frequency and percentage distribution which was the most common form of summarizing data in this research.

Second, the study was employed explanatory research design in that the relationship between variables is correlated with an aim of estimating the integrated influence of the factors on delay of private building construction projects. According to Sekaran (2004) explanatory research design helps us to infer relationship between variables from the existed data through analysis of the association between two or more variables and how several independent variables might explain the variance in a dependent variable.

### 3.5. Research Methodology

The research objectives were described and measured level infactors affecting timely completion of private buildings construction projects in general and onspecific objectives of the study. Such as: material, equipment, finance, contractor, client& external reated factors. The objectives of the study call for quantitative and qualitative research approach; particularlycross sectional surveywas employed in the study.Under this study before data going to be collected authorization letter would have been collected before administering the instruments then researcher informed the concerned body which means respondents through the letter of cooperation he acquired from the University.

The questionnaireof this research had two sections. The first section containsthe demographiccharacteristicsoftherespondents which wererequestedtoprovidedetailedinformation about their place of construction, gender, age, year of service or experience, educationlevel & classis of respondents.

Thesecondsectionof thequestionnaire wasdesignedtoenabletheresearcherin order togather informationaboutfactors that affects timely completion of private building construction projectswhich contains statements that were specifically designed to measure the six factors of delay components. Such as: material related, equipment related, finance related, contractor related, client related, and external related factors.

In section two of the questioner survey was designed based on five point Likert scale on objective of the study which shows level of agreements to measure weight as follows: 1=stronglydisagree, i.e.,verymuchdissatisfiedwiththecasedescribed,2=disagree,i.e.,notsatisfiedwiththecasedescribed,3=Undecided,i.e.,uncertain withthecase,4=agree,i.e.,feelingalrightwiththecasedescribed,and 5=stronglyagree,i.e.,verymuchsupportingthecasedescribed. Under this study the questioneir designed in English version then translated into Amharic & Oromic language.

After the researcher prepared questionnaire, by adopting and adapting from related studies; formats, sequences and instruments; the questioneir would have been evaluated by academic advisor prior to the data collection; if there was any idea which needs correction. Under this study there are close ended question that addressed by different person who involved in private building construction projects. The data would have been distributed 10-15 questionnaires per a day.

After data collction; checking and editing were done in order to ensure completeness, accuracy and uniformity of the data's. All instruments were assigned serial numbers to facilitate identification and

data entry into the computer. Coding of data was done after checking/editing of data, and entering into the computer for analysis.

The survey was framed in a way that is suitable for people how to give their personal view in different private building construction projects which the data were collected and analyzed using SPSS software version 20. The survey was used descriptive and explanatory research design in order to present the responses of the respondents.

The semi-structured interview plan has been made with chief of construction office. Prior to undertake the interview, the researcher would have asked the consent of the respondents' politely. This semi structured interview was constructed by an open-ended question which took an average time of 30 minutes questioning and answering session.

### **3.6. Types, sources and techniques of data collection**

The study was conducted by using both primary and secondary data. The methods of collecting primary and secondary data differ since primary data are to be originally collected, while in case of secondary data the nature of data collection work is merely that of compilation (Kothari, 2004). This study acquired primary data from professionals with adequate knowledge or stakeholders in private building construction projects. Such as: Owners, owners' representatives, contractor, consultants & the leader of Jimma town construction office through questionnaire and interview techniques with in the study area. The source of secondary data under this study was Jimma town construction office report.

#### **3.6.1. Primary data**

Primary data is actually first hand data or the information collected by researchers via direct observations. Normally, primary data is collected through observation method, surveys, interviews and experiments instead of other sources which are available for public access Kotler (2012). For this study primary data were collected from respondents through survey questionnaires furthermore the qualitative primary data were collected from the leader of Jimma town construction office through interview.

#### **3.6.2. Secondary data**

Secondary data was collected from different sources like company manuals, documents, company reports, journals, library books, and internet sources so as to achieve the main information need of the study. But this study relayed on office report.

### **3.6.3. Techniques of data collection**

The techniques that employed under this study were questionnaire and semi-structured interview to collect the necessary quantitative and qualitative data from the respondents' respectively. To measure all the variables, the researcher used highly validated measurements from different researchers.

This study used data through collecting mainly from survey by using standard questionnaires prepared in the form of five point Likert scales ranging from (1) strongly disagree to (5) strongly agree. Closed-ended questionnaires were prepared on the basis of factors affecting timely completion of private building construction projects. Because it helps to avoid pressure upon the respondents in any direction and better to obtain the required data within the study area.

### **3.7. Data Collection Procedure**

Data collection was conducted after the researcher finished as well as approved the final proposal in order to carry out the empirical research in Jimma University Business & Economics College Department of Accounting and Finance under the guidance of research coordinator through department. The authorization letter would have been collected by the researcher before administering the instruments.

Then the researcher informed the concerned body through the letter of cooperation he acquired from the University that means; Jimma town construction office leader and the respondents of the questioner. Such as: contractors, consultants & owner's/owners representative/ with regard to delayed private buildings construction projects of each kebeles'. Under this study informing of those stakeholders & either distribution of self administered questioner or making an interview had been at the same time.

At the end the researcher collected the completed questioner and also rejected that questioner which is not properly filled. Under this collection of data there was late giving back of the filled questioner by the respondents. Such problem was averted via walk-in, searching and phone call to those respondents by researcher.

### **3.8. Target population<sup>i</sup>**

Total population of the study or the target population is the total sum of kebeles in Jimma town. Such as: Hermata Mendera, Ginjo Guduru, Bacho Bare, and Awetu Mendera & Mentina Kebele. Because majority of private building construction projects were delayed here in these kebeles and also there were financial, time and resource limitation to address the whole kebe. These are those selected areas

of private commercial building construction projects number of each target population are;40,35,20,30 & 25 respectively. Hence, the total population of the study is 150 (construction office report, 2019).

### **3.9. Sample Design**

It is true that census survey requires so much time, effort and money. To this end, social science research is generally about inferring patterns of behaviors within specific population. That is, difficult to study the entire population because feasibility and cost constraints. Hence, it is reasonable to select a representative sample from the population/target group of interest for survey (Bhattacharjee 2012).

Stratified sampling method was used for this study. This sampling is a mixture of deliberate and random sampling technique. If population from which the sample to be drawn does not constitute a homogeneous group, stratified sampling technique is used in order to obtain a representative sample.

This study was employed probability sampling technique. Because; it was avoided ambiguity of sample size and have rule. Probability sampling is the most commonly associated with survey-based research strategies where we need to make inferences from our sample about a population to answer our research question(s) or to meet our objectives.

#### **3.9.1. Sample Size Determination**

The member of samples or representative respondents was taken by employing the appropriate sampling technique and the required number of samples calculated as follows. Since the number of the respondents is finite, the researcher used determination of size through the approach based on precision rate and confidence level.

Yamane (1967) provided simplified formula to calculate sample size; n-represents sample size, N-represents target population e-represents the level of precisions 1%, 99% confidential level. The main reason to select 1% for this study was all about to increase the number of sample from total population.

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{150}{1 + 150(0.1)^2}$$

$$n = \frac{150}{1 + 150(0.01)}$$

$$n = 60$$

### 3.9.2. Sampling Technique

In stratified technique, the population is stratified into a number of non-overlapping sub populations or strata and sample items are selected from each stratum. If the items selected from each stratum is based on simple random sampling the entire procedure, first stratification and then simple random sampling, is known as stratified random sampling (Kothari 2004).

In this study stratified sampling technique was introduced to gather data. The strata were formed areas of construction wide in order to get the representative sample size. Each area of construction is act as a single stratum. Hence the numbers of strata were 5 as equal number as the number of selected areas of construction of the town.

Therefore, the number of the sample sizes was the summation of samples of each stratum.

i.e.,  $n = n_1 + n_2 + n_3$ . And to determine the sample size of each stratum, the following formula was employed.

$$\frac{n_h}{n} = \frac{N_h}{N} \text{ (Cochran 1977).}$$

$N_h$ -represents total population of each stratum  $n_h$ -is a sample size selected from total population of each strata using Yamane formula

**Table 3.1: Sample size of each stratum**

No.	Areas of Commercial private building construction projects for strata.	$N_h$	$n_h$
1	Hermata Mendera	40	16
2	Ginjo Guduru	35	14
3	Bacho Bore	20	8
4	Awetu Mendera	30	12
5	Mentina Kochi	25	10
Total		150	60

Source: (Jimma town construction office report, 2019).

Thus, the representative sample size of the study from the total population of 150 was 60 respondents. Lottery method was used to select the respondent from each respondents or stratum. Such probabilistic method ensured that every respondent in the population had an equal chance of being included in the study.



### 3.10. Method of Data Analysis and Presentation

The study examined factors affecting timely completion of private building construction projects and thereby some statistical tools were used depending on their appropriateness for the study in the empirical analysis. To analyze the data and address the objectives of the present study, statistical methods including descriptive statistics like percentage and frequency were employed to present the responses obtained from respondents, and inferential statistics correlation analysis was used to understand the relationship between each study variables and multiple linear regressions was used to determine factors affecting on time completion of private building construction projects. Such as: material related factors, equipment related factors, finance related factors, contractor related factors, client related factors, and external related factors. All the analysis methods would assisted by the SPSS (Statistical Package for Social Science) software Version 20.

Determining of data analysis is to establish relative importance of factors that contribute to causes of construction delay. In this study regression model was applied in determining the level of influence that independent variables have on dependent variables. On this basis that correlation and multiple regression analysis was applied and the data presented through using table.

Multiple regression analysis is a major statistical tool for predicting the unknown value of a variable from the known value of two or more variables. And it is about finding a relationship between variables and forming a model. The model was developed using six explanatory variables or predictors, which have influences on a timely project completion. The equation of multiple regression models is

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \epsilon$$

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ -Coefficient

$\epsilon$ -Error term

Y- Timely project completion was identified based on the specified time in the contract which mean the time deviated according to the agreements are time delay.

$\beta_0$  -The constant

X1 -Material related factors

X2 -Equipment related factors

X3 -Finance related factors

X4-Contractor related factors

X5-Consultant related factors

X6-Client related factors

X7-External related factors

X1-x7- is independent variables

**Table3.2: Model specification of variables**

S.No	Predictor variable(x)	Beta coefficient( $\beta$ )	Predictor x-value assigned
1	Material related factors	$\beta_1$	$X_1$
2	Equipment related factors	$\beta_2$	$X_2$
3	Finance related factors	$\beta_3$	$X_3$
4	Contractor related factors	$\beta_4$	$X_4$
5	Client related factors	$\beta_5$	$X_5$
6	External related factors	$\beta_6$	$X_6$
	Timely project completion	Constant	Y

### 3.11. Variables Definition

#### 3.11.1. Dependant variable

**Timely Project Completion-** it is all about finishing the activities of construction project according to the time specified in contractual between the parties. According to Munanom (2012) timely project completion is simply the time that specified in the contract to construct the project.

#### 3.11.2. Independent variables

**Materials** - are simply raw or finished goods that can be input for the intended projects in order to construct or accordingly. Majid& McCaffer (1998) tried to identify material related factors, such as shortage of material, poor quality of material, poor procurement material, late delivery of material, and unreliable suppliers as the factors which contribute to delay.

**Equipments-** are instruments or devices that we supported/use/ to do the activities of the projects. Different authors do not focus on defining the term equipment related factors rather; they focused on the classifying of such factors. For example, according to Long et al. (2004) equipment related fac-

tors are; insufficient numbers of equipment, frequent equipment breaks down, shortage of equipment, improper equipment, and slow mobilization of equipment, equipment allocation problem and in adequate modern equipment.

**Finances** - are simply budget or money in which the intended projects need. Long et al.(2004) listed finance related factors, such as in adequate fund allocation; contractor's financial difficulties; High interest rate; client's financial difficulties; unreasonable constraints to client; delay payments to suppliers/sub-contractors; and monthly payment difficulties.

**Contractors** -are the person who is professional in constructing of construction projects. Chan & Kumaraswamy (1996) illustrated contractor related factors, such as poor site management; poor supervision; improper project planning and scheduling; inadequate contractor experience; inappropriate construction methods; Inaccurate time estimate; Incompetent project team; Unreliable subcontractor; Obsolete technology.

**Client** -are person in whom the project is going to be deliver after finishing. Many researchers do not focus on the definition of terminology. For example, according to Odeh & Battaineh (2002) identified contractor related factors, such as slow decision making by client; lack of experience of client in construction; change orders; client interference; lack of capable representative; lack of communication and coordination and improper project feasibility.

**External** -are acts out of the control of project stakeholders or act arises not due to the fault of the stake holders. Researchers do not focus on the definition of terminology.For example,Long et al. (2004) tried to identify external related factors, such as, unforeseen ground condition, inflation/price fluctuation, and poor weather condition; problem with neighbors, low labor productivity, governmentregulation, slow permit by government, civil/political disturbance & act of God.

### **3.12. Validity and Reliability Test**

It is not adequate just to measure social science constructs using any scale that we prefer. We also must test these scale to ensure that: (1) these scales indeed measure the unobservable construct that we wanted to measure (i.e., the scales are "valid"), and (2) they measure the intended construct consistency and precisely (i.e., the scales are "reliable").

Reliability and validityof measurement scale are the measurement against which the adequacy and accuracy of our measurement procedures are evaluated in scientific research (Bhattacharjee 2012). So, the researcher checks for validity and reliability of the data collected through survey.

### 3.12.1. Validity Test

The validity of a scale refers to the degree to which it measures what it is supposed to measure. Unfortunately, there is no one clear-cut indicator of a scale's validity. The validation of a scale involves the collection of empirical evidence concerning its use (Pallant 2016). In this study the question was reviewed by two advisors (main advisor and co advisor) to make sure that each item is measuring what is intended to be measured. In order to; measure the attributes of interest and for the instrument to be predictable, consistent, and accurate.

### 3.12.2. Reliability Test

The reliability test is an important instruments to measures the degree of consistency of an attribute which is supposed to measure.As stated by Pallent (2016) the less variation of the instruments produces in repeated measurements of an attribute the higher its reliability.Reliability can be equated with the stability, consistency, or dependability of measuring tool.

Cronbach's alpha is one of the most commonly accepted measures of reliability. It measures the international consistency of the items in a scale.It indicates that the extent to which the items in a questionnaire are related to each other. The normal range of cronbach's coefficient alpha value ranges between 0-1 and the higher values reflect a higher degree of internal consistent.Different authors accepted different values of this test in order to achieve internal reliability;but the most commonly accepted values 0.7 as it should be equal to or higher than to reach internal reliability (**Hair, Joseph, Robert& David2003**).

**Table3.3: Measure of internal Consistency-Cronbach's alpha**

<b>Dimension</b>	<b>No of items</b>	<b>Cronbach's alpha</b>	<b>Remark</b>
Material related factors	4	.907	Reliable
Equipment related factors	7	.880	Reliable
Finance related factors	7	.917	Reliable
Contractor related factors	9	.949	Reliable
Clientrelated factor	7	.882	Reliable
External related factors	9	.898	Reliable
Timely	6	.701	Reliable
Entire	49	.876	Reliable

Source: (Pilot Survey, 2020).

As shown above in the table 3.3, all dimensions' Cronbach's alpha is above the cut of point of 0.7. The lowest Cronbach's alpha registered is 0.880 (delay causing factors) and the highest is 0.701

(timely project completion). Therefore; it can be inferred that all measures are internally consistent. Accordingly, the questionnaires were distributed to sample respondents.

### **3.11. Ethical Considerations**

Some of the expected principles of ethical behaviour that are widely accepted within the scientific community are: voluntary participation and harmlessness, anonymity and confidentiality, disclosure, analysis and reporting (Bhattacharjee 2012). Therefore, the researcher of this thesis attempted to consider these issues in respect of each as follows.

**Voluntary participation and harmlessness:** Subjects in a research project must be aware that their participation in the study is voluntary, that they have the freedom to withdraw from the study at any time without any unfavorable consequences, and they are not harmed as a result of their participation or non-participation in the thesis. To this effect, the researcher gave freedom to the respondents and they exercised freely on the given questionnaire.

**Anonymity and confidentiality:** to protect subjects' interests and future well-being, their identity must be protected in a scientific study. This is done using the dual principles of anonymity and confidentiality. Anonymity implies that the researcher or reader of the final research report or paper cannot identify a given response with a specific respondent. Confidentiality means the researcher can identify a person's responses, but promises not to reveal that person's identify in any report, paper, or public forum.

In both cases, this has been confirmed by the researcher in such a way that there was no need to fill their name on the questionnaire. Even if there were face-to-face interview questions, they were assured that their identity would not be disclosed. Hence, much trust was developed between the researcher and sample respondents.

**Disclosure:** usually, the researcher has an obligation to provide some information about his/her study to potential subjects before data collection to help him/her decide whether or not they wish to participate in the study. For instance, who is conducting the study, for what purpose, what outcomes are expected, and who will benefit from the results. Guided by this ethical principle, the researcher has disclosed about the content and purpose of the study. Moreover, the benefit of the research after finalization has been well-disclosed to the respondents.

**Analysis and reporting:** it has been evident that the researcher also has ethical obligations to the scientific community on how data is analyzed and reported in the study. Accordingly, genuine information has been forwarded not to mislead the scientific community.

# CHAPTER FOUR

## RESULTS AND DISCUSSIONS

Under this chapter the collected data has been analyzed and interpreted through liner regression & correlation analysis model. The analysis was made using descriptive statistics & explanatory research design. Lastly, the hypothesized tests were conducted and results were interpreted.

### 4.1 Demographic Information

The tables below show that the demographic information of respondents; who participated in answering of the questioner. The researcher only focused classes of respondents that have high relationship with the private building construction projects. Descriptive statistics such as frequencies and percentages relating the demographic characteristics of respondents are presented in tables below.

#### 4.1.1 Response rate

A total of 60 sets of questionnaires were distributed to the potential respondents and a total of 54 questionnaires were collected. Out of this, 2 sets of the questionnaires were considered unusable because they were not properly filled in while 4 of the questionnaire were not filled totally because of they were too busy. Therefore, only 54 usable sets of collected questionnaires were used for the data analysis. Thereby, the response rate was 90 (percent).

**Table 4.1: Response Rate of the Questionnaire.**

No.	Areas of construction (kebele)	Questionnaire distributed	Questionnaire responded	Response rate (%)
1	Hermata Mendera	16	14	87.5
2	Ginjo Guduru	13	12	92.3
3	Bacho Bore	10	10	100
4	Awetu Mendera	11	9	81.8
5	Mentina Kochi	10	9	90
	Total	60	54	90.3≈90

Source (field survey of 2020)

#### 4.1.2 Category of Respondents

Table 4.2 the sample characteristics are summarized as following in the tables

Category of Respondents	Frequency	Valid Percentage
Owner	20	37.0
Contractor	15	27.8
Owners Representative	16	29.6
Consultant	3	5.6
Total	54	100.0

Source: (field Survey, 2020)

From 54 respondents 37% were Owner, 27.8% were contractor, 29.6% were Owners' representative & lastly 5.6% were Consultant as shown in table 4.2 above.

#### 4.1.3 Gender of Respondents

Table 4.3: Gender composition; of respondents

Gender Category	Frequency	Valid Percentage (%)
Male	36	66.7
Female	18	33.3
Total	54	100.0

Source: (field Survey, 2020)

As shown in table 4.3 above, a total of 54 people responded to the questionnaire in this study. Majority of respondents (66.7%) to the study were males, indicating that more males are involved in the private building construction projects in Jimma town as compared to female which were (33.3%).

Table 4.4: Age Distribution Category; of Respondents.

Age category	Frequency	Valid Percentage (%)
18 years & below	0	0
19-28 years	7	13.0
29-38 years	22	40.7
39-48 years	14	25.9
49 years & above	11	20.4
Total	54	100.0

Source (survey 2020)



According to table 4.4 above, 22 respondents were between 29 to 38 years of age representing 40.7% formed the majority; 14 respondents were between 39 to 48 years of age representing were 25.9%; 11 respondents were between 49& above years of age representing were 20.4%; 7 respondents were between 19 to 28 years were represented 13% and no respondents were between 18 years &below. The results above shown that; private building construction projects employed mainly youngpeople.

**Table 4.5: Education background; of Respondents.**

Education level	Frequency	Valid Percent
No normal education	0	0
Primary School	3	5.6
Secondary School Complete	5	9.3
Certificate	7	13.0
Diploma	13	24.1
Degree	26	48.1
Masters &above	0	0
Total	54	100.0

Source (field survey of 2020)

According to table 4.5 above no respondents of private building construction projects have normal education as well as Masters & above. Based on the results given above 5.6% of the respondents had primary education;9.3% of respondents had secondary school completed;13% of respondents had certificate; 24.1% of respondents had diploma& lastly48.1% had degree. These implies that majority of respondents were degree holders.

**Table4.6: Respondents job experience**

Category of job experience	Frequency	Percentage
Below one year	2	3.7
1-2 years	3	5.6
2-3 years	7	13.0
3-4 years	8	14.8
4-5 years	9	16.7
More than 6 years	25	46.3
Total	54	100.0

Source; (field survey, 2020)

Table 4.6 above presents; job experiences of various respondents' who participated in the questionnaire. The results in the table above reveal that; 25 respondents were more than 6 years' job experiences which formed majority with representing 46.3%; 9 respondents were from 4-5 years' job experience which accounts 16.7%; 8 respondents were from 3-4 years' job experience which is 14.8%. 7 respondents were from 2-3 years' job experience with representing 13.0%; 3 respondents were 1-2 years' job experience which is 5.6% & finally, 2 respondents were below one-year job experiences which accounts 3.7%.

## **4.2. Respondents' perception towards factors affecting timely completion of private building construction projects**

According to Burns & Bush (2006) descriptive analysis represented the transforming of raw data into a form that enable researcher to understand and interpret easier in terms of rearranging, ordering and manipulating data in order to provide descriptive information. Calculating frequency & percentages were commonly used to summarize the data for the interval scale of independent variables (material related, equipment related, finance related, contractor related, client related and external related) and dependent variable (timely project completion).

As described earlier, the questions related with both the dependent and independent variables were prepared using a likert scale. That means, from each perspective questions were prepared in the form of ordinal scale.

In order to explore respondent's perception of delay causing factors on every variable according to the response of the study, percentage for the independent variables (material related, equipment related, finance related, contractor related, client related and external related) were calculated. According to (Al-Sayaad, Rabea, & Samrah, 2006) as cited by (Bassam, 2013) making result interpretation using percentage is the easy one.

### **4.4.1. Material related factors**

Material is an input or raw material that is needed to construct the projects. Construction project can be fundamentally affected by material related factors. Many researchers have already identified elements of material related factors. According to Majid & McCaffer (1998) the shortage of material,

poor quality of material, poor procurement of material, late delivery of materials are fundamental elements of material related factors which contribute to the construction project delay

**Table4.7. Respondents perception toward material related factors**

Material Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
MR1	The shortages of construction material can affect timely completion of building construction project	0	25.9	9.3	40.7	24.1
MR2	The poor qualities of construction materials have Negative Effects on timely completion of building construction projects	1.9	0	22.2	13.0	63.0
R3	The poor procurement material situations have contribution as to the delay of building construction project	11.1	1.9	9.3	77.8	0
MR4	The late delivery of material can affect on time completion of building construction project	9.3	11.1	0	13.0	66.7
	Average grand point%	5.58	9.73	10.2	36.13	38.45

Source; (field survey, 2020)

As per the result of table 4.7 above the respondents perception towards problem with the shortage of construction materials 40.7% were agreed while 25.9% of respondents response show that disagreed on the issue;24.1% of respondents response shows that strongly agreed;9.3% of respondents responses shows us undecided and 0% of respondents responses were strongly disagreed. According to table 4.7 above respondents' responses on the poor qualities of construction materials 63% were strongly agreed while 22.2% of respondents' response shows us undecided; 13% of respondents' responses reveal us agreed; 1.9% of respondents' response shows us strongly disagreed.Lastly 0% of respondents' response shows us disagreed.

According to table 4.7 above, the percentage of agreed respondents on the poor procurement material were 77.8% which is highest; 11.1% of respondents were strongly disagreed; 9.3% of respondents were neutral; 1.9% of respondents were disagreed& 0% of respondents were strongly agreed. Ac-

According to table 4.7 above, the percentage of strongly agreed respondents on the late delivery of construction material were 66.7% which is majority; 13.0% of respondents were agreed; 11.1% of respondents were disagreed; 9.3% of respondents were strongly disagreed & 0% of respondents were undecided.

The average grand percentages of each factor with respect to material related were deductively stated. Such as: 38.8% of respondents were strongly agreed, 36.13% of respondents were agreed, 10.2% of respondents were undecided, and 9.725% of respondents were disagreed and lastly 5.575% of respondents were strongly disagreed. It implies that material related factors affect the timely completion of private building construction projects within the study area.

#### 4.4.2 Equipment related factors

According to Odeh & Bataineh (2002) they identified as equipment allocation in high magnitude can result causes for construction project delay. Long et al. (2004) identified equipment related factors such as: Insufficient numbers of equipment; Frequent equipment breakdown; Shortage of equipment parts; Improper equipment; Slow mobilization of equipment; Equipment allocation problem and Inadequate modern equipment.

**Table 4.8: Respondents perception toward equipment related factors**

Equipment Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
EQR1	Insufficient numbers of equipment have no effect as to the timely completion of building construction projects	27.8	9.3	0	63.0	0
EQR2	Frequent equipment break down have negative effects on the schedule of building construction projects	9.3	13.0	0	14.8	63.0
EQR3	Shortage of equipment parts will indirectly extend the schedule of building construction projects	0	20.4	14.8	64.8	0
EQR4	Using improper equipment will contribute building construction project delay	11.1	0	9.3	27.8	51.9

EQR5	Slow mobilization of equipment can result building construction project delay	9.3	0	0	48.1	42.6
EQR6	Equipment allocation problem can cause building construction project time overrun	13.0	22.2	13.0	14.8	37.0
EQR7	Inadequate modern equipment may cause building construction project delay	0	13.0	9.3	61.1	16.7
	Average grand point%	10.07	11.13	6.63	42.06	30.17

Source; (field survey, 2020)

As per the result in table 4.8 above respondents' perception towards insufficiency of equipments were accounted 63% agreed which is majority while 27.8% of respondents were strongly disagreed and 9.3% of respondents were disagreed; both respondents on strongly agreed and undecided were 0%.

According to table 4.8 above respondent perception towards problems of frequent equipment breakdown were 63% strongly agreed while 14.8% of respondents' perception were agreed on the issue; 13% of respondents answer would show as it is disagreed and 9.3% of respondents perception reflects strongly disagreed. Lastly 0% of respondent perception reflects undecided.

As per the results in table 4.8 above respondents perception towards problem with the shortage of equipment parts were 64.8% agreed while 20.4% of respondents perception were disagreed on the issue; 14.8% of respondents answer would tell us undecided and lastly both strongly agreed and strongly disagreed were 0%.

According to table 4.8 above the respondents perception towards usage of improper equipments were 51.9% strongly agreed while 27.8% of respondents' perception were agreed; 11.1% of respondents perception were strongly disagreed; 9.3% of respondents perception were undecided and lastly 0% of respondent perceptions shows disagreed.

According to table 4.8 above, the percentage of agreed respondents on slow mobilization of equipments were 48.1% which is highest; 42.6% of respondents were strongly agreed; 9.3% of respondents were strongly disagreed; at the end both 0% respondents were disagreed as well as neutral. Again table 4.8 above shows that, percentages of strongly agreed respondents on equipment allocation problems were 37.0% which is majority; 22.2% of respondents were disagreed; 14.8% of respondents were agreed; lastly 13.0% of respondents were both strongly disagreed and undecided.

Under table 4.8 above, the percentage of agreed respondents on inadequate modern equipments were 61.1% which is majority; 16.7% of respondents were strongly disagreed; 13.0% of respondents were disagreed; 9.3% of respondents were undecided and 0% of respondents were strongly disagreed.

The average grand percentages of each factor with regard to equipment related were deductively stated. Such as: 42.06% of respondents were agreed; 30.17% were strongly agreed, 11.13% were disagreed, 10.07% were strongly disagreed and lastly 6.63 % were undecided. Based on the result obtained from the respondents' shown that; the non fulfillments of equipment related factors would have negative effect as to the project timely completion.

#### 4.4.3. Factors of finance related delays

Finance related factors would have high contribution in construction project delay. These factors are similar with equipment and material related problems in causing delay of construction project. Finance related factors were including: in adequate fund allocation; contractor's financial difficulties; High interest rate; client's financial difficulties; unreasonable constraints to client; delay payments to suppliers/sub-contractors; and monthly payment difficulties (Long et al., 2004).

**Table 4.9: Respondents perception towards finance related factors**

Finance Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
FR1	In adequate fund allocation have negative effect on the timely completion of building construction project	9.3	0	13.0	29.6	48.1
FR2	Contractor financial difficulty may cause building construction project time overrun	1.9	20.4	0	50.0	27.8
FR3	The existence of high interest rate can cause building construction project delay	13.0	13.0	22.2	14.8	37.0
FR4	Clients financial difficulties can cause building construction project time overrun	22.2	0	0	33.3	44.4
FR5	Unreasonable finance constraints to client can cause building construction project delay	0	22.2	14.8	14.8	48.1
FR6	The delay payments to suppliers/ sub-contractors/ cause building construction project delay	0	0	22.2	46.3	31.5

FR7	The difficulties as to monthly payment may cause building construction project delay	20.4	0	0	44.4	35.2
	Average grand point%	9.54	7.94	10.31	33.31	38.87

Source: (field survey, 2020)

According to table 4.9 above, the percentage of strongly agreed respondents on in adequate fund allocation were 48.1% which is majority; 29.6% of respondents were agreed; 13.0% of respondents were neutral; 9.3% of respondents were strongly disagreed & lastly 0% of respondents were disagreed. Again table 4.9 above shows, the percentage of agreed respondents on contractor financial difficulties were 50.0% which is highest; 27.8% of respondents were strongly agreed; 20.4% of respondents were disagreed & lastly 0% of respondents were neutral.

According to table 4.3 above, the percentage of strongly agreed respondents on the existence of high interest rate were 37.0% which is majority; 22.2% of respondents were undecided; 14.8% of respondents were agreed; lastly both disagreed and strongly disagreed were 13.0%. Again table 4.9 above shows, the percentage of strongly agreed respondents on clients' financial difficulties were 44.4% which is highest; 33.3% of respondents were agreed; 22.2% of respondents were strongly disagreed; at the end both disagreed and undecided were 0%.

According to table 4.9 above, the percentage of strongly agreed respondents on unreasonable constraints to clients were 48.1% which is majority; 22.2% of respondents were disagreed; 14.8% of respondents were undecided; 14.8% of respondents were agreed and finally 0% of respondents were strongly disagreed. As per table 4.9 above, the percentage of agreed respondents on the delay of payments to suppliers/ sub-contractors/ were 46.3% which is highest; 31.5% of respondents were strongly agreed; 22.2% of respondents were undecided; lastly both strongly disagreed and disagreed were 0%.

According to table 4.9 above, the percentage of agreed respondents on the difficulties as to monthly payments were 44.4% were majority; 35.2% of respondents were strongly agreed; 20.4% of respondents were strongly disagreed; lastly both disagreed and undecided were 0%.

Generally, the average grand percentage of each factor with regard to finance related factors were deductively stated. Such as: 38.87% of respondents were strongly agreed; 33.31% of respondents were agreed; 10.31% of respondents were undecided; 9.54% of respondents were strongly disagreed and 7.94% of respondents were disagreed. The analysis shows that; as finance related factors are basic problem that hampered timely project completion.

#### 4.4.4. Contractor related factors

Contractor related factors are similar with the finance, material and equipment related factors in causing construction project delay. Many literatures come across that contractors' related factor have big contributions to the causes of delay. According to Chan & Kumaraswamy (1996) there are basic elements of delay causing factors. Such as: poor site management, poor supervision, inadequate contractor experience, inappropriate construction methods, inaccurate time estimate, incompetent project team, unreliable subcontractor, obsolete technology, project planning and scheduling.

**Table 4.10: Respondents perception towards contractor related factors**

Contractor Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
CR1	Poor site management affect on time completion of building construction project	11.1	9.3	0	33.3	46.3
CR2	Poor supervision of building construction project causes delay	13.0	0	22.2	27.8	37.0
CR3	Improper project planning and scheduling will result time overrun	9.3	13.0	0	20.4	57.4
CR4	Inadequate contractors experience can be factors for a delay in building construction project	0	9.3	13.0	16.7	61.1
CR5	Inappropriate construction methods will bring building construction project delay	11.1	0	9.3	35.2	44.4
CR6	Inaccurate time estimate will result building construction project delay.	20.4	0	0	40.7	38.9
CR7	Incompetent project team members can be a factor as to the delay of building construction project	13.0	9.3	0	33.3	44.4
CR8	Unreliable sub contractor will cause delay of building construction project	0	13.0	9.3	40.7	37.0



CR9	Using obsolete technology will bring building construction project delay	9.3	0	25.9	24.1	31.5
	Average grand point%	9.69	5.99	8.86	30.24	44.22

Source; (Field survey, 2020)

According to results of table 4.10 above, the percentage of strongly agreed respondents on Poor site management were 46.3% which is highest; 33.3% of respondents were agreed; 11.1% of respondents were strongly disagreed; 9.3% of respondents were disagreed; 0% of respondents were undecided. As per table 4.10 above, the percentage of strongly agreed respondents on poor supervision of building construction projects were 37.0 % which is majority; 27.8% of respondents were agreed; 22.2% of respondents were undecided; 13.0% of respondents were strongly disagreed and 0% of respondents were disagreed.

According to table 4.10 above, the percentage of strongly agreed respondents on improper project planning and scheduling were 57.4% which is highest; 20.4% of respondents were agreed; 13.0% of respondents were disagreed; 9.3% of respondents were strongly disagreed and 0% of respondent were undecided. As per the table 4.10 above, the percentage of strongly agreed respondents on inadequate contractor's experiences were 61.1% which is highest; 16.7% of respondents were agreed; 13.0% of respondents were undecided; 9.3% of respondents were disagreed and 0% of respondents were strongly disagreed.

According to table 4.10 above; the percentage of strongly agreed respondents on inappropriate construction methods were 44.4% which is majority; 35.2% of respondents were agreed; 11.1% of respondents were strongly disagreed; 9.3% of respondents were undecided and 0% of respondents were disagreed. As per table 4.10 above shows, the percentage of agreed respondents on inaccurate time estimate was 40.7% which is highest; 38.9% of respondents were strongly agreed; 20.4% of respondents were strongly disagreed, finally both disagreed and undecided were 0%.

According to table 4.10 above, the percentage of strongly agreed respondents on incompetent project team members were 44.4% which is majority; 33.3% of respondents were agreed; 13.0% of respondents were strongly disagreed; 9.3% of respondents were disagreed and 0% of respondent were undecided. As per table 4.10 above shows, the percentage of agreed respondents on unreliable sub contractor were 40.7% which is highest; 37.0% of respondents were strongly agreed; 13.0% of respondents were disagreed; 9.3% of respondents were undecided and 0% of respondents were strongly disagreed.

According to table 4.10 above, the percentage of strongly agreed respondents of using obsolete technology were 31.5% which is highest. 25.9% of respondents were undecided; 24.1% of respondents were agreed; 9.3% of respondents were strongly disagreed and 0% of respondents were disagreed.

Generally, the average grand percentages of each factor with regard to contractor related factors were deductively stated. Such as: 44.22% of respondents were strongly agreed; 30.24% of respondents were agreed; 9.69% of respondents were strongly disagreed; 8.86% of respondents were undecided and 5.99% of respondents were disagreed. This implies that contractor related factors were affected on time completion of private building construction projects in Jimma town.

#### 4.4.5. Client related factors

According to Odeh & Battaineh (2002) basic delay causing factors have identified. Such as: slow decision making by client, lack of experience of client in construction, change orders, client interference, lack of capable representative, lack of communication as well as coordination and improper project feasibility study.

**Table 4.11, Respondents perception towards Client related factors**

Client Related		Percentage of respondents%				
	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
CLR1	Slow decision making by client will cause building construction project delay	11.1	9.3	0	38.9	40.7
CLR2	Lack of experience by client in building construction project will cause time overrun	11.1	0	9.3	37.0	42.6
CLR3	Change orders can cause building construction project delay	22.2	0	0	24.1	53.7
CLR4	Client interference will affect negatively on the timely completion of building construction projects	0	35.2	0	25.9	38.9
CLR5	Lack of capable representatives will causes building construction project delay	0	0	22.2	11.1	66.7
CLR6	Lack of communication and coordination will causes building construction project delay	9.3	11.1	0	27.8	51.9

CLR7	Improper project feasibility study will have negatively effect on the timely completion of building construction projects	0	0	9.3	22.2	68.5
	Average grand point%	7.67	7.94	5.83	26.71	51.86

Source: (field survey, 2020)

According to table 4.11 above, the percentage of strongly agreed respondents on slow decision making by client were 40.7% which is majority; 38.9% of respondents were agreed; 11.1% of respondents were strongly disagreed; 9.3% of respondents were disagreed and 0% of respondents were undecided. Secondly, the percentage of strongly agreed respondents on lack of experience by clients was 42.6% which is highest; 37.0% of respondents were agreed; 11.1% of respondents were strongly disagreed; 9.3% of respondents were undecided and 0% of respondent were disagreed.

Thirdly, the percentage of strongly agreed respondents on change orders was 53.7% which is majority; 24.1% of respondents were agreed; 22.2% of respondents were strongly disagreed; lastly both disagreed and undecided were 0%. Fourthly, the percentage of strongly agreed respondents on client interference was 38.9% which is high; 35.2% of respondents were disagreed; 25.9% of respondents were agreed; at the end both strongly agreed and undecided were 0%.

Fifthly, the percentage of strongly agreed respondents on lack of capable representatives was 66.7% which is majority; 22.2% of respondents were undecided; 11.1% of respondents were agreed; lastly both strongly agreed and agreed were 0%. Sixthly, the percentage of strongly agreed respondents on lack of communication and coordination were 51.9% which is highest; 27.8% of respondents were agreed; 11.1% of respondents were disagreed; 9.3% of respondents were strongly disagreed and 0% of respondents were undecided.

At the end the percentage of strongly agreed respondents on improper project feasibility study were 68.5% which is majority; 22.2% of respondents were agreed; 9.3% of respondents were undecided; lastly both strongly agreed and agreed were 0%.

Generally, the average grand percentages of client related factors were deductively stated. Such as: 51.86% of respondents were strongly agreed; 26.71% of respondents were agreed; 7.94% of respondents were disagreed; 7.67% of respondents were strongly disagreed and 5.83% of respondents were undecided. This implies that client related factors were affected on time completion of private building construction projects within the study area.

#### **4.4.6. External related factors**

According to Long et al. (2004) there are fundamental elements on external related factors: such as, poor weather conditions, problems with neighbor, price escalation, low labor productivity, government regulation, slow permit by the government, civil/political/ disturbances, act of God and inflation/price fluctuation

**Table 4.12: Respondents perception towards external related actors**

External Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
EXR1	Inflation/price fluctuation/ will bring building construction project delay	20.4	0	0	27.8	51.9
EXR2	Poor weather condition will cause building construction project delay	0	0	13.0	11.1	75.9
EXR3	Problem with neighbors will causes building construction project delay	9.3	24.1	13.0	37.0	16.7
EXR4	Price escalation will cause building construction project delay	14.8	0	9.3	11.1	64.8
EXR5	Low labor productivity will cause building construction project delay	9.3	13.0	14.8	48.1	14.8
EXR6	Government regulation which donot properly considered building construction projects can bring delay.	13.0	22.2	14.8	11.1	38.9
EXR7	Slow permit by government will cause building construction project delay	13.0	0	11.1	50.0	25.9
EXR8	Civil/political disturbances will affect negatively on the timely completion of building construction projects	9.3	13.0	0	14.8	63.0
ER 9	Acts of God will cause building construction project delay	0	0	22.2	37.0	40.7
	Average grand point%	9.9	8.03	10.91	27.26	37.86

Source: (survey, 2020)

According to table 4.13 above, the percentage of strongly agreed respondents on inflation/price fluctuation/ were 51.9% which is majority; 27.8% of respondents were agreed; 20.4% of respondents were strongly disagreed; lastly both of agreed and undecided respondents were 0%. Secondly, the percentage of strongly agreed respondents on poor weather condition were 75.9% which is highest;

13.0% of respondents were undecided; 11.1% of respondents were agreed; at the end both strongly agreed and agreed were 0%.

Thirdly, the percentage of agreed respondents on problem with neighbors was 37.0% which is majority; 24.1% of respondents were disagreed; 16.7% of respondents were strongly agreed; 13.0% of respondents were undecided and 9.3% were strongly disagreed. Fourthly the percentage of strongly agreed respondents on price escalation was 64.8% which is highest; 14.8% of respondents were strongly disagreed; 11.1% of respondents were agreed; 9.3% of respondents were undecided and 0% of respondents were disagreed.

Fifthly, the percentage of agreed respondents on low labor productivity was 48.1% which is majority; both undecided and strongly agreed were 14.8%; 13.0% of respondents were disagreed and 9.3% of respondents were strongly disagreed. Sixthly the percentage of strongly agreed respondents on government regulations was 38.9% which is highest; 22.2% of respondents were disagreed; 14.8% of respondents were undecided; 13.0% of respondents were strongly disagreed and 11.1% of respondents were agreed.

According to table 4.13 above, the percentage of agreed respondents on slow permit by government were 50.0% which is majority; 25.9% of respondents were strongly agreed; 13.0% of respondents were strongly disagreed; 11.1% of respondents were undecided and 0% of respondents were disagreed. As per table 4.12 above, the percentage of strongly agreed respondents on civil/political/ disturbances were 63.0% which is highest; 14.8% of respondents were agreed; 13.0% of respondents were disagreed; 9.3% were strongly disagreed and 0% were undecided.

Lastly, the table 4.13 above shows that; the percentage of agreed respondents on acts of God was 40.7% which were majority; 37.0% of respondents were agreed; 22.2% of respondents were undecided; finally, both strongly agreed and disagreed were 0%.

Generally, the average grand percentages of external related factors were deductively stated. Such as: 37.86 % of respondents were strongly agreed; 27.26 % of respondents were agreed; 10.91% of respondents were undecided; 9.9% of respondents were strongly disagreed and 8.03% of respondents were disagreed. This implies that external related factors were affected on time completion of private building construction projects with in the study area.

#### **4.4.7. Timely Project Completion**

According to Munanom (2012) timely project completion is simply the time that specified in the contract to construct the project. From the very beginning construction time is very important to deter-

mine performance and efficiency of the organization. Timely project completion in this study is a success factor. According to kernzer (1998) the success of the project will be determined through meeting completion with in planned time.

**Table4.13: Respondent perception towards dependent variable**

Time Related		Percentage of respondents%				
No.	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
TM 1	Timely completion of private building construction projects can be affected; when material related factors are insufficient.	11.1	9.3	0	38.9	40.7
TM 2	Timely completion of private building construction projects can benegetively influenced; when equipment related factors are not fulfilled.	11.1	0	9.3	37.0	42.6
TM 3	Timely completion of private building construction projects can be affected; when finance related factors are inadequate.	22.2	0	0	24.1	53.7
TM 4	Timely completion of private building construction projects can be negetively influenced; when problems of contractor related factors are not solved.	0	35.2	0	25.9	38.9
TM 5	Timely completion of private building construction projects can be affected; if the problems of client related factors are not properly averted.	0	0	22.2	11.1	66.7
TM 6	Timely completion of private building construction projects canbe negetively influenced; if external related factors cannot be controlled.	9.3	11.1	0	27.8	51.9
	Average grand point%	7.67	7.94	5.83	26.71	51.86

Source: (survey, 2020)

According to table 4.14 above, the percentage of strongly agreed respondents on project timely completion with regard to material related factors were 53.7% which is highest; 37.0 % of respondents were agreed; 9.3% of respondents were strongly disagreed; lastly both disagreed and undecided respondents were 0%. Secondly, the percentage of agreed respondents on project timely completion with regard to equipment related factors were 50.0% which is majority; 33.3% of respondents were undecided; 16.7% of respondents were strongly agreed; at the end both strongly disagreed and disagreed respondents were 0%.

Thirdly, the percentage of agreed respondents on project timely completion with regard to finance related factors were 63.0% which is highest; 33.3% of respondents were strongly disagreed; both undecided and agreed respondents were 1.9%; 0% of respondents were disagreed. Fourthly, the percentage of agreed respondents on project timely completion with regard to contractor related factors were 74.1% which is majority; 14.8% of respondents were strongly disagreed; 11.1% of respondents were undecided; lastly both strongly disagreed and agreed were 0%.

Fifthly, the percentage of strongly agreed respondents on project timely completion with regard to client related factors were 77.8% which is majority; 13.0% of respondents were agreed; 9.3% of respondents were disagreed; at the end both of strongly agreed and undecided were 0%. As per the table 4.14 above, the percentage of both undecided and agreed respondents on project timely completion with regard to external related factors were 37.0% which is majority; 16.7% of respondents were strongly agreed; 9.3% of respondents were strongly disagreed and 0% of respondents were disagreed.

Finally, the average grand percentage of timely project completion with regard to time related such as: (material, equipment, finance, contractor, client & external related factors) were deductively stated. Such as: 40.45% of respondents were strongly agreed; 35.5% of respondents were agreed; 13.88% of respondents were undecided; 8.65% of respondents were strongly disagreed and 1.55% of respondents were disagreed. These implies that timely project completion (dependent variable) could be affected by independent variable (material, equipment, finance, contractor, client & of external related) factors with in the study area on private building construction projects.

#### **4.5. Inferential Analysis**

Under inferential analysis linear regression model is the one and the basic. This model types require numerical types of data which the analysis and its output is also in terms of number. So the nature of data for this study were count data in which linear regression have hard time in fitting these data.



Inferential analysis is concerned with the various tests of significance for testing hypotheses in order to determine what validity data can be said to conclusions. It is also concerned with the estimation of population values. It is mainly on the basis of inferential analysis that the task of interpretation (i.e., the task of drawing inferences and conclusions) was performed.

Pearson’s correlation and multiple linear regressions are the main inferential statistical methods employed in this study to analyze the relationships between the dependent variable (project timely completion) and the independent Variables (material, equipment, finance, contractor, client & external related factors).

**4.5.1. The Relationship between causes of delay and project timely completion.**

Correlations are the measure of the linear relationship between two variables. A correlation coefficient has a value ranging from -1 to +1. Values closer to the absolute value of 1 indicate that there is a strong relationship between the variables being correlated whereas values closer to 0 indicates that there is little or no linear relationship. It is extremely useful for getting idea of the relationships b/n independent variables and the dependent variable, and for a preliminary look for multi co linearity (Field, 2009).

According to Hinkle, Wiersma and Jurs (2003) the rule of thumb for interpreting the size of a correlation coefficient is as isndicated below in the table.

**Table4.14: Rule of Thumb for Interpreting the Size of a Correlation Coefficient**

Size of Correlation	Interpretation
.90 to 1.00 (-.90 to -1.00)	Very high positive (negative) correlation
.70 to .90 (-.70 to -.90)	High positive (negative) correlation
.50 to .70 (-.50 to -.70)	Moderate positive(negative) correlation
.30 to .50 (-.30 to -.50)	Low positive (negative) correlation
.00 to .30 (-.00 to -.30)	Little if any correlation

Source: (Hinkle, Wiersma & Jurs, 2003)

Therefore, using the above table 4.15 and SPSS output of the survey, the below results of the depend-ent and independent variables is going to be discussed in detail basis.

**Table4.15: Results showing correlation analysis**

No		TMLC	MR	EQR	FR	CR	CL	EXR
1	Timely completion	1						
2	Material related	.470 <sup>**</sup>	1					
3	Equipment related	.669 <sup>**</sup>	.772 <sup>**</sup>	1				
4	Finance related	.507 <sup>**</sup>	.610 <sup>**</sup>	.707 <sup>**</sup>	1			
5	Contractor related	.572 <sup>**</sup>	.557 <sup>**</sup>	.714 <sup>**</sup>	.513 <sup>**</sup>	1		
6	Client related	.775 <sup>**</sup>	.724 <sup>**</sup>	.754 <sup>**</sup>	.774 <sup>**</sup>	.675 <sup>**</sup>	1	
7	External related	.381 <sup>**</sup>	.344 <sup>*</sup>	.436 <sup>**</sup>	.524 <sup>**</sup>	.524 <sup>**</sup>	.541 <sup>**</sup>	1
**. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed).								

Source: (field survey 2020)

#### 4.5.1.1 The relationship between materials related factors and project timely completion

According to the table 4.16, there is a significant positive relationship between material related factors and timely project completion ( $r=.470$ ,  $p<0.01$ ) According to Hinkle, Wiersma and Jurs (2003) the magnitude of correlation are the relationship between the two variables were low.

Empirically, the study of Chang and Wang (2008) found that the construction material related factors have positive relation with timely completion of construction projects ( $r=0.275$ ). This study is consistent with these findings.

#### 4.5.1.2 The relationship between equipment related factors and Project on time completion

As summarized in the table 4.15 above, there is a significant positive relationship between equipment related factors and project timely project completion ( $r=.669$ ,  $p<0.01$ ). As Hinkle (2003) indicated, level of correlation falls in moderate positive level of correlation.

Empirically, the study of Fissha (2015) found that equipment related has positively related with project timely completion ( $r=.606$ ,  $p<0.01$ ). This implies that, the result of the study was consistent with this empirical evidence cited.

#### **4.5.1.3 The relationship between finance related factors and project timely completion**

According to table 4.15 above, where two variables: such as finance related and timely project completion are positively correlated ( $r=.507$ ,  $p< 0.01$ ). These correlations have significant positive relationship. The magnitudes of relationship between the two variables were moderate.

Empirically, Shoham et al. (2008) founded that the correlation of finance related factor was positive and significant on actual project timely completion ( $r=.668$ ). This showed that, the result of the present study was consistent with this empirical evidence cited.

#### **4.5.1.4 The relationship between contractors related factors and project timely completion**

As in table 4.15 above, results of the correlation shows that; there is a significant positive relationship between the contractor related factors and project timely project completion ( $r=.572$ ,  $p< 0.01$ ). This implies that contractors related factors have moderate and positive level of correlation with project timely completion.

Empirically, Schwepker (2013) founded that the correlation of contractors related factors were positive and statistically significant on actual project timely completion with ( $r=.54$ ). Therefore, as mentioned above, the result was consistent with empirical studies.

#### **4.5.1.5 The relationship between clients related factors and project timely completion**

The correlation between client related factors and project timely project completion was founded as ( $r=.775$ ,  $p<0.01$ ) with a positive significant relationship between the two variables. According to Hinkle (2003) magnitude of relationship between the two variables is found to be “high”

Empirically, Shoham et al. (2008) founded that the correlation of client related factors was positive and significant on actual timely completion of building construction projects ( $r=.71$ ). This shows that, the result of the present study was consistent with this empirical evidence cited.

#### **4.5.1.6 The relationship between external related factors and project timely completion**

According to the table 4.15, there is a significant positive relationship between external related factors and project timely project completion ( $r= .381$ ,  $p< 0.01$ ). This implies that external related factors have low positive level of correlation with project timely completion.

Empirically, Kamran (2015) founded that the correlation analysis show that overall effect size for external related factors and project timely completion relationship is positive and significant ( $r=.325$ ,  $p<0.01$ ). This indicates the result of the present study was consistent with this empirical evidence.

## 4.6. Multiple Linear Regression Analysis

Prior to running the analysis of multiple regression models, it is mandatory to assess whether the collected data violate some key assumptions of the standard linear regression models; because an assumption violation can result in distorted and biased parameter estimates. The assumptions include sample size, normality, multi-collinearity, homoscedasticity, linearity, and independence of residuals crucial to confirm them.

### Assumption 1 – Sample Size

Regression analysis is often sensitive to sample sizes. The common rule of thumb floating about the sample size in standard linear regression is fifteen (15) cases of data per predictor (Field, 2009). According to Green (1991) to test the overall model the recommended minimum sample size of  $N=50+8k$ , where  $k$  is the number of independent variables. Taking into account the six (6) number of independent variables in the present study;  $50+8(6) =98$  which is less than observed respondents/sample size/. i.e.  $50+ 8(6) = 98 < 150$ . Based on the criteria, the sample size exceeds the minimum to run the standard multiple linear regressions.

### Assumption 2 – Normality T-test

To check whether the residuals have a normal distribution, scatter plots of residuals against each independent variable and predicted dependent variable were analyzed (i.e. the normal probability plot or normal P-P of regression standard residual and histogram were used). (See appendix 1F).

### Assumption 3 – Multicollinearity of the variables

According to Field (2009) if there is perfect collinearity between predictors, it becomes impossible to obtain unique estimates of the regression coefficients because there are an infinite number of combinations of coefficients that would work equally well. Multicollinearity can be controlled by two ways: tolerance values and values of variance of inflation factor (VIF).

Any variable with tolerance below (0.10 or tolerance with a value above (10.0) would have a correlation more than 0.90 with other variables, indicative of the multicollinearity problem. The tolerance is calculated with an initial linear regression analysis. Tolerance is defined as  $T= 1-R^2$  for the first step regression analysis. With  $T< 0.1$  there might be multicollinearity problem in the data. And the variance inflation factor of the linear regression is defined as  $VIF=1/T$ . Similarly, with  $VIF>10$ , there is signal that multi collinearity problem exists. According to table 4.16, the present study reveals that the value of tolerance is more than 0.1 and the value of VIF is less than 10, this indicates the fitness of the model in explaining the factors affecting project timely completion.

**Table 4.16: Results of multi co linearity test**

Independent variables (From)	Dependent variable(To)	Multi-Collinearity Statistics	
		Tolerance	VIF
Material related	Project timely completion	.345	2.900
Equipment related	Project timely completion	.226	4.432
Finance related	Project timely completion	.316	3.166
Contactora related	Project timely completion	.443	2.256
Client related	Project timely completion	.297	3.369
External related	Project timely completion	.470	2.127

Source: (field Survey, 2020)

According to the table 4.16, the tolerance for all independent variables is more than (0.10) and VIF for independent variables is less than the limited value (10.0), and so that there is no multi collinearity between independent variables of the model.

#### **Assumption 4 - Homoscedasticity (Equal Variance)**

At each level of the independent variables, the variance of the residual terms should be constant. This just means that the residuals at each level of the independent variables should most likely have the same variance (homoscedasticity). The scatter plots of residuals against each of the independent variables and predicted dependent variables were used to check homoscedasticity of residuals. The scatter plots of the residuals against the predicted or dependent variable values looks like a random array of dots evenly distributed around zero.

#### **Assumption 5- Independence of Residuals**

The last assumption for multiple regressions is the independence of residuals. The independence of the residuals can be measured by Durbin-Watson statistics. The value of the Durbin-Watson statistic ranges from 0 to 4. As a general rule, the residuals are independent (not correlated from one observation to the other one) if the Durbin-Watson statistic is approximately 2, and an acceptable range is 1.50 - 2.50 (Muluadam, 2015). For this study table- 4.17, the output value of Durbin-Watson is 1.986; approximate to 2, indicating that there is no correlation among the residuals.

**Table 4.17: Durbin-Watson Statistics for Independence of Residuals**

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1		.839	.818	.33775	1.986
a. Predictors: (Constant), material related, equipment related, finance related, contractor related, client related & external related factors					
b. Dependent Variable: timely project completion					

Source: (field survey, 2020)

#### 4.7. Effects of factors that affect timely project completion

To test the hypothesis, it was deemed appropriate to use multiple linear regression estimations for testing the proposed hypothesis. Since multiple linear regressions refers to an analysis concerned with the study of the dependence of one variable, the dependent variable on more other variables, the independent variables, with a view to estimating and/or predicting the percentage value of the former in terms of the values of the latter (Gujarati, 2006).

Due to the existence of significant correlations between material, equipment, finance, contractor, client & external related factors with timely project completion, it was necessary to establish the strength of the predictive relationships between the variables. In line with the existence of significant associations amongst the constructs, regression analysis was conducted in order to examine the correlation more closely and to examine the effects of the independent variables on the dependent variable. To test the predictive relationships material, equipment, finance, contractor, client & external related factors were used as independent variables with timely project completion was used as dependent variable.

**Table 4.18: Results showing regression analysis**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.916 <sup>a</sup>	.839	.818	.33775
a. Predictors: (Constant), material, equipment, finance, contractor, client & external related factors				
b. Dependent Variable: project timely completion				

Source: (field survey, 2020)

From the model summary in table 4.18, The value ( $R=.916$ ) is the multiple correlation coefficient between independent variables material, equipment, finance, contractor, client, external related factors and a dependent variable namely timely project completion.

The Value of R square is a measure of how much variability in the outcome is accounted for by the independent variables. The result shows that a value of R square is .839 which implies that 83.9 percent variation was caused by the considered independent variables. .839 R square value means that the total variation in the dependent variable is explained or caused by 83.9 percent of the change in all independent variables: material, equipment, finance, contractor, client & external related. In other words, 16.1 percent of the variation in project timely completion cannot be explained by these six independent variables. Positivity and significance of all values show that the model summary is also significant and therefore gives logical support to the study model.

The value of adjusted R square i.e. (.818) gives some idea of how well the model generalizes and ideally one would like its value to be the same, or very close to, the value of R square. In the present study, the difference between the values of R square and the adjusted R square is  $(.839-.818 = .021)$  about 2.1percent. This reduction means that if the model was derived from the population rather than from the sample, it would account for approximately 2.1 percent less variance.

The standard error of the estimate is a measure of the variability of the multiple correlations. Therefore, as shown in the model summary for the regression analysis table above, the standard error of the estimate of this model is .33775. This implies that the variability of the multiple correlations is as much as this numeral.

Positive and significance of all values shows that model summary is also significant and therefore gives logical support to the present study model. The model is statistically significant or the p-value for the model is less than (0.01). This means the fitness of the model in explaining timely project completion is influenced by the independent variables considered.

## 4.8. Coefficients of Regression Analysis

**Table4.19: Results showing coefficient of regression analysis**

Coefficients <sup>a</sup>					
Independent Variables	Unstandard- ized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.164	.237		9.124	.000
Material related	.350	.081	.434	4.353	.000
Equipment related	.442	.099	.553	4.489	.000
Finance related	.163	.087	.196	1.877	.021
Contactora related	.026	.068	.034	.382	.000
Client related	.731	.079	.996	9.263	.000
External related	.209	.077	.232	2.713	.003

a. Dependent variable: project timely completion

Source: (field Survey, 2020)

According to table 4.19 above, coefficient of regression shown between independent variables material related, equipment related, finance related, contractor related, client related, external related factors and a dependent variable project timely completion. The beta values tell what degree each independent variable affects the outcome if the effects of all other predictors are held constant.

Each of the beta values has an associated standard error indicating to what extent these values would vary across different samples, and these standard errors are used to determine whether or not beta value differ significantly from zero. The t-test associated with b-value is significant (if the value in the column labeled Sig. is less .05) then the predictor is making significant contribution to the model.

The smaller value of the significance and the larger value of the **t** in the table 4.19 shows the greater contribution of independent variables towards dependent variable. Material related factors  $t=4.353$  larger than zero & significance 0 .000 which is  $p<.05$ , equipment  $t=4.489$  greater than zero & significance 0.000 is  $p<.05$ , finance related  $t=1.877$  greater than zero & significance 0.000 which is  $p<.05$ , contractor  $t=0.382$  greater than zero & significance level is 0.000 which is  $p<.05$ , client related  $t=9.263$  greater than zero significance 0.000 which is  $p<.05$ , external related  $t=2.713$  greater than zero & significance 0.003 which is  $p<.05$ .



When the standard error is small even a small deviation from zero can reflect a meaningful difference because beta is representative of the majority of possible samples.

The following hypotheses were tested using multiple regression analysis to know if there is an effect of independent variables on the dependent variable. According to the decision rule: accept the null hypothesis ( $H_0$ ) if the significance level ( $\alpha$ ) of the variable is greater than the (0.05) significance level, reject ( $H_0$ ) if the significance level ( $\alpha$ ) of the variable is equal or less than (0.05) (Sekaran, 2004). According to the previous decision rule, the researcher has tested the proposed hypotheses and found the following results: Results showed that there was a statistically significant effect for six independent variables (material, equipment, finance, client & external related factors) except contractor related factors on the dependent variable (timely project completion).

Beta values were calculated to examine the individual contributions of the independent variable towards dependent variable. It was calculated by relating independent variable towards dependent variable. It was calculated by relating variable jointly with independent variable, and also t-value was calculated to know the significance of the level of the independent variables to be explained individually t-value in this model was calculated by taking each independent variable separately with dependent variable. As the model clearly shows, t-values in all cases support the hypothesis of the study according to statistical rule which says, if t-value is greater than two (2), then hypothesis can be accepted (Bryman & Bell 2003).

### **Beta coefficient**

To compare the different variables, it is important that you look at the standardized coefficients, not the unstandardized ones. ‘Standardised’ means that these values for each of the different variables have been converted to the same scale so that you can compare them. If you were interested in constructing a regression equation, you would use the unstandardized coefficient values listed as B (Pallant, 2016).

### **Unstandardized Beta Coefficient**

By recalling the model specifications of the variables from the chapter three of methodology part, it was said that, the unstandardized coefficients ( $\beta_1$  up to  $\beta_6$ ) are the coefficients of the estimated regression model. Hence, the model of timely project completion can be written by including error term ( $\epsilon$ ), in the below form.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \epsilon$$

Where, Y = Dependent Variable

$\beta_1$ = unstandardized regression coefficient of material related

$\beta_2$ = unstandardized regression coefficient of equipment related

$\beta_3$ = unstandardized regression coefficient of finance related

$\beta_4$ = unstandardized regression coefficient of contractor related

$\beta_5$ = unstandardized regression coefficient of client related

$\beta_6$ = unstandardized regression coefficient of external related

$\varepsilon$ =error term

Taking in to consideration the results from table 4.16, the regression equation for the study was as follows:

$$Y=2.164+.350X_1+.442X_2+.163X_3+.026X_4+.731X_5+.209$$

Interpretation:

#### **Standardized; Beta Coefficient.**

The standardized coefficients are the coefficients which explain the relative importance weight (RIW) of explanatory variables. These coefficients are obtained from regression after the explanatory variables are all standardized. The idea is that the coefficients of explanatory variables can be more easily compared with each other as they are then on the same scale.

From the above table 4.19 that the client related factors standardized coefficient is larger than the other 5 determinants of timely project completion. The other is equipment, material, external, finance & client related factors respectively. The larger the standardized coefficient, the higher is the relative importance and contribution of the factor to the timely project completion of the private building.

#### **Interpretation:**

- For every one-unit (one amount) increment on *material related factors*; the percentage of project timely completion increases by 43.40 (percent).
- For every one-unit (one amount) increment on *equipment related factors*; the percentage of project timely completion increases by 55.3 (percent).

- For every one-unit (one amount) increment on *finance related factors*; the percentage of project timely completion decreases by 19.6 (*percent*).
- For every one-unit (one amount) increment on contractor related factors of the percentage of project timely completion increases by 3.4(*percent*).
- For every one-unit (one amount) increment on *client related factors*; the percentage of project timely completion increases by 99.6(*percent*).
- For every one-unit (one amount) increment on *external related factors*; the percentage of project timely completion increase by 23.2(*percent*).

#### 4.9. Analysis of Variance (ANOVA)

**Table 4.20: Results showing analysis of Variance (ANOVA) of Regression Analysis**

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	27.908	6	4.651	40.774	.000 <sup>b</sup>
	Residual	5.362	47	.114		
	Total	33.270	53			
a. Dependent Variable: project timely completion						
b. Predictors: (Constant), material, equipment, finance, contractor, client & external related factors						

Source: (field Survey, 2020)

According to table 4.20 above shows; analysis of variance (ANOVA) of regression analysis between independent variables considered and a dependent variable project timely completion were examined. The ANOVA tells us whether the model, overall, results in a significantly good degree of prediction of the outcome variable (Field 2009). The table depicts that in regression, the value of sum of squares is 27.908, the value of degree of freedom (df) is 6, and the value of mean square is 4.651.

The most important part of the table is the *F*-ratio, which is calculated using the below equation, and the associated significance value of that *F*-ratio. *F*-ratio is a measure of how much the model has improved the prediction of the dependent variable (project timely completion) compared to the level of inaccuracy of the model (Field, 2009). The value of *F*-statistics is 40.774 which is significant at  $p < 0.001$  (because the value in the column labeled *Sig.* is less than .001). This result tells us that there is less than a 0.1 percent chance that an *F*-ratio this large would happen if the null hypothesis true. The significant level in ANOVA table shows that the combination of the variables significantly predicts

the dependent variable. On the other hand, in residual, the value of sum of squares is 5.362, the value of df is 47 and the value of mean square is 0.114 were.

$$F_{ratio} = \frac{\text{Mean square Regression}}{\text{Mean Sqaure Residual}} = \frac{4.651}{0.114} = 40.798$$

According to Field (2009) if a model is good, then we expect the improvement in prediction due to the model to be large and the difference between the model and the observed data or mean square residual to be small. In short, a good model should have a large F-ratio (greater than 1 at least) because the mean square regression will be bigger than the mean square residual. According to table 4.20, the ANOVA table result shows a relationship between the independent variables and dependent variable of the study with F-statistic or F-ratio of 40.774.

## **4.10. Hypothesis Testing and Discussion**

### **4.10.1 Hypothesis Testing**

Hypothesis testing is the method of testing whether claims or hypothesis regarding a population are likely to be true. The goal of hypothesis testing is to determine the likelihood that a population parameter. Here there are two hypotheses: null ( $H_0$ ), and alternative ( $H_a$ ). The significance (sig.) value expresses a value to accept or reject the (null) hypothesis. It is also called the P-value. The P-value is the probability that the correlation is one just by chance. Therefore, the smaller the P-value, the better will be. The general rule is reject  $H_0$  if  $P < .05$  and accept  $H_0$  if  $P \geq .05$  (Pallant, 2016).

In this part of the study, proof of the null hypothesis is made based on table 4.21 below for the variables. Because, to test the research hypothesis already set in chapter one, it is possible to find out if the independent variables are significant predictors of the dependent variable. To test these relationships, the regression analysis was applied.

**Table4.21: Coefficient and P-value of the independent Variables**

Independent Variables	Ustandarized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.164	.237		9.124	.000
Material related	.350	.081	.434	4.353	.000
Equipment related	.442	.099	.553	4.489	.000
Finance related	.163	.087	.196	1.877	.021
Contactora related	.026	.068	.034	.382	.000
Client related	.731	.079	.996	9.263	.000
External related	.209	.077	.232	2.713	.003
a. Dependent variable: project timely completion					

Source: (field survey, 2020)

Hypothesis:

- ✚ Ho1- material related factors has no statistically significant effect on the timely completion of private building construction projects.
- ✚ Ho2- equipment related factor has no statistically significant effect on the timely completion of private building construction projects.
- ✚ Ho3- finance related factor has no statistically significant effect on the timely completion of private building construction projects.
- ✚ Ho4- contractor related factor has no statistically significant effect on the timely completion of private building construction projects.
- ✚ Ha4- client related factor hasno statistically significant effect on the on the timely completion of private building construction projects.
- ✚ Ho6- external related factor has no statistically significant effect on the timely completion of private building construction projects.

The research is being done at 95% confidence interval. Hence, each hypothesis should be either accepted or rejected with reference to 5% level of significance; i.e. the hypothesis must be rejected if P- value is less than 0.05 other wise accept it.

Therefore:

**Ho<sub>1</sub>: material related factor has no statistically significant effect on the timely completion of private building construction projects.**

Material related factors do not have a statistically significant effect on timely completion of private building construction projects. (Reject Ho<sub>1</sub> if  $p < 0.05$ ) otherwise accept it. From table 4.21 the significant value for material related is 0.000 which is less than p value of 0.05. Therefore, Ho<sub>1</sub> is rejected, which indicates that material related has a statistically significant effect on the timely completion of private building construction projects.

Besides, the value of beta for material related factors is ( $\beta = 0.434$ ) this shows that material related factors has positive and significant effect on timely completion of private building construction projects. Hence, the above proposed hypothesis is rejected and the alternative hypothesis is accepted; which indicates that material related factors has a statistically significant effect on the timely completion of private building construction projects. Thus, the above result is supported by Ashraf, S & Ghanim, A (2016), in which material related factors has a significant influence on the timely completion of private building construction projects.

**Ho<sub>2</sub>: equipment related factors have no statistically significant effect on the timely completion of private building construction projects.**

Equipment related a factor do not have a statistically significant effect on timely completion of private building construction projects. (Reject Ho<sub>2</sub> if  $p < 0.05$ ) otherwise accept it. From table 4.21 the significant value for is 0.000 which is less than p value of 0.05. Therefore, Ho<sub>2</sub> is rejected, which indicates that equipment related factors has a statistically significant effect on the timely completion of private building construction projects.

Besides the value of beta for equipment related is ( $\beta = 0.553$ ) this shows that equipment related has positive and significant effect on timely completion of private building construction projects. Hence, the above proposed hypothesis is rejected and the alternative hypothesis is accepted; which indicates that equipment related has a statistically significant effect on the timely completion of private building construction projects. Thus the above result is supported by Metha (2000) in which equipment related factors have a significant influence on timely completion of private building construction projects.

**Ho<sub>3</sub>: finance related factor do not have statistically significant effect on the timely completion of private building construction projects.**

Finance related a factor do not have a statistically significant effect on timely completion of private building construction projects. (Reject Ho<sub>2</sub> if  $p < 0.05$ ) otherwise accept it. From table 4.21 the significant value for is 0.021 which is less than p value of 0.05. Therefore, Ho<sub>2</sub> is rejected, which indicates that finance related factors has a statistically significant effect on the timely completion of private building construction projects.

Besides the value of beta for finance related factors is ( $\beta = 0.553$ ) this shows that finance related has positive and significant effect on timely completion of private building construction projects. Hence, the above proposed hypothesis is rejected and the alternative hypothesis is accepted; which indicates that equipment related has a statistically significant effect on the timely completion of private building projects. The above result is supported by the studies of (Babakus, David, Thomas, & Raymond, 1999; Shoham et al. 2008).

**Ho<sub>4</sub>: Contractor related factor has no statistically significant effect on the timely completion of private building construction projects.**

Contractor related a factor does not have a statistically significant effect on timely completion of private building construction projects. (Reject Ho<sub>4</sub> if  $p < 0.05$ ) otherwise accept it. From table 4.21, the significant value for contractor related is 0.000 which is less than p value of 0.05. Therefore, Ho<sub>4</sub> is rejected, which indicates that contractor related factor has a statistically significant effect on the timely completion of private building construction projects.

In addition to the value of beta for contractor related factor is ( $\beta = 0.049$ ). This shows that finance related has positive and significant effect on timely completion of private building construction projects. Hence, the above proposed hypothesis is rejected and the alternative hypothesis is accepted; which indicates that contractor related factor has a statistically significant effect on the timely completion of private building construction projects. Thus the above result is supported by Schwepker (2013) and Shoham et al. (2008) in which contractor related factor has a significant influence on the timely completion of private building construction projects.

**Ho<sub>5</sub>: client related factor has no statistically significant effect on the timely completion of private building construction projects.**

Client related has not a statistically significant effect on timely completion of private building construction projects. (Reject Ho<sub>5</sub> if  $p < 0.05$ ) otherwise accept it. From table 4.21 the significant value

for client related is 0.000 which is less than p value of 0.05. Therefore, Ho5 is rejected, which indicates that channel support has a statistically significant effect on the project timely completion.

Besides, the value of beta for client related factors is ( $\beta=0.996$ ) this shows that client has positive and significant effect on project timely completion. Hence, the above proposed hypothesis is rejected and the alternative hypothesis is accepted; which indicates that client related factors has a statistically significant effect on the project timely completion. Thus the above result is client related by Bilky (1982) in which client related has a significant influence on project timely completion.

**Ho6: external related factors have no statistically significant effects on timely completion private building construction projects**

External related factor has no a statistically significant effect on project timely project completion. (Reject Ho6 if  $p < 0.05$ ) otherwise accept it. From table 4.21, the significant value for material related factor is 0.003 which is less than p value of 0.05. Therefore, Ho6 is rejected, which indicates that an external related factor has a statistically significant effect on the timely project completion.

Besides, the value of beta for external related factor is ( $\beta=0.232$ ) this shows that external related factors has positive and significant effect on project timely completion. Hence, the above proposed hypothesis is rejected and the alternative hypothesis is accepted; which indicates that external related factor has statistically significant effect on the project timely completion. Thus the above result is supported by Kamran (2015) and Fissaha (2015) in which external related factors has significant influence on project timely completion.

**Table 4.22: Summary of hypothesis test result**

No.	Hypothesis	Tool	Result
H <sub>01</sub>	Material related factor has statistically significant effect on the project timely completion.	Regression	Accepted
H <sub>02</sub>	Equipment related factor has statistically significant effect on the project timely completion.	Regression	Accepted
H <sub>03</sub>	Finance related factor has statistically significant effect on the project timely completion.	Regression	Accepted
H <sub>04</sub>	Contractor related factor has statistically significant effect on the project timely completion.	Regression	Accepted
H <sub>05</sub>	Client related factor has statistically significant effect on the project timely completion.	Regression	Accepted



H <sub>06</sub>	External related factor has statistically significant effect on the project timely completion.	Regression	Accepted
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Source: (fieldsurvey, 2020)

#### 4.11. Qualitative Analysis: Discussion of Interview Results

Ricky (2007) explained that qualitative research helps in understanding a phenomenon more deeply by analyzing the reasons behind it, while as quantitative tools analyze the phenomenon itself, without bothering about the human perception of reason “why”. Hence, so as to supplement the quantitative analysis, interviews were conducted with leader of Jimma town construction office. The leader of construction office said that construction project delay should come to the picture when any construction project does not complete according to the time specified in agreements of the parties. Because project is not ever lasting rather it has beginning & ending period.

There are high in magnitude of private building construction projects delay. Since, there are many factors that contributed for delays of this sector. Such as: labor issue, finance, whether condition, price escalation of construction material, owner’s interference, problems with neighbors’, political conflict and so on are some factors raised by the leader. So this delay causing factors have negative effects on projects. Such as: it makes abandons of the projects; semi finishing & the rest parts of the project left without completing. Generally, the projects left without giving according to the purpose it intended. On the other hand; according to the leader delay have negative effects among the parties to the contract. Such as: dispute, arbitration, litigation & cost overrun to the parties.

The interruption of the construction work does not necessarily show construction project delay. Because, when we look different projects by our necked eye it seems as project is already delayed. But, the period specification of the parties into contract is decisive to say so. According to this respondent controlling and evaluation of private building construction projects are the other sources for the causes of delay. This implies that there is no as such, controlling and evaluation in this construction sector. Since, it is private which have not as such organized structures that follow, control and evaluate the whole activities in line with the schedule. As per the idea of the leader; for example; the fundamental tools that is important to evaluate project delay is referring contractual documents or oral agreements of the parties that specified the starting and ending period of construction projects.

According to this person, it is important to mitigate/drawing strategy/ for delay causing factors through strong management, properly investigating site condition, through giving necessary attention to design of ground work as well as foundation, through developing communication system with each

stake holders, offering incentives for early completion, developing human resource and observing past performance contract.

Finally, this respondent recommended on this specific study. Such as:

- ✚ The government has to make follow up and instigate the owner to complete the projects within the time frame in the contract. Since, the advantage of the construction is not only limited to the owner but also it would have advantage for the development of the town.
- ✚ The contractors, clients, labors & etc have to feel sense of ownership & speed up the projects as much as possible to finish the projects within the schedule.
- ✚ The owner should try to facilitate credit from bank or any others if their financial problem that make not to complete projects within the schedule.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions and recommendations from the collected data and their respective interpretations. Accordingly, the objective of this study is to assess factors affecting timely completion of private building construction projects in Jimma town. The study employed quantitative & qualitative research approaches.

To analyze the data, statistical methods including descriptive statistical tools like frequency & percentage has been employed to describe the variables. In addition; to test all hypotheses, the effect and the relationship, inferential statistical tools like multiple linear regressions and correlation analysis has been used. The target populations of the study have high relationship with private building construction projects. Such as: consultant, contractor, owners' or owners' representatives and leader of construction office with in the study area. In this study both primary and secondary data were used as sources of information.

Based on the research objective, English version questionnaires were prepared and translated into local language. Such as: Amharic & Oromic. One hundred fifty (150) populations were approached using simple random sampling (lottery technique) from the stratum of five construction areas (kebele). From out of 150 survey forms, 60 questionnaires were distributed and 54 questionnaires are completed as well as returned while 6 questionnaires were out of use as it shown under the title 4.2 above, which illustrates the response rate is 90 (percent). Regarding the reliability of the questionnaire table 3.3 illustrates that all the questionnaires were reliable and acceptable with Cronbach's Alpha result 0.876

#### 5.1. Summary of Findings

With respect to the demographic information of the respondents table 4.2 the majority of the respondents were 66.7 (percent) which is males and the remaining 33.3 (percent) were females. As the table 4.3 shows; the majority of the respondents were between 29-38 age groups while middle age groups were 13 (percent). This table above reveals; 39-48 years of age group were 25.9%. Respondents between 19-28 years were represented 13% and no respondents between 18 years & below. According to table 4.4 above, 48.1% of the respondents were degree holder, 24.1% have diploma, 13% have certificate, 9.3% were secondary school completed, and 5.6% have primary edu-

cation, no informal education as well as master and above. Table 4.5 above shows; majority of respondents were 46.3 (percent) who have more than 6 years' job experiences, 16.7 (percent) have 3-4 years, 14.8 (percent) have 2-3 years, 13 (percent) have 1-2 years and 5.6 (percent) of respondents have below one-year job experience.

As far as the perception of respondents towards factors affecting timely completion of private building construction projects are concerned; most of the respondents have strongly agreed and followed by agreed with the six variables of factors that affect the timely completion of private building construction projects by giving the high rates scale to client related followed by contractor related, finance related, material related, external related & equipment related factors with average grand percentage 51.86, 44.2, 38.87, 38.5, 37.86, 16.7 respectively as indicated on the tables in chapter four. Furthermore, the respondents strongly agreed for dependent variable of timely project completion with average grand percentage 40.45.

According to table 4.15 above; there are six independent variables i.e. material related, equipment related, finance related, contractor related, client related & external related which positively and significantly correlated with the dependent variable i.e. Timely project completion at 99 percent confidence level ( $P < 0.01$ ). The highest correlation is signified by client related ( $r = 0.775$ ), followed by equipment ( $r = 0.669$ ), contractor related ( $r = 0.572$ ), finance ( $r = 0.507$ ), material related ( $r = 0.470$ ), external related ( $r = 0.381$ ) significantly correlated with timely project completion.

Table 4.18 depicts multiple linear regressions of the six factors that can affect project timely completion. The result shows that the model test is significant with the R Square value of 0.839 (83.9 percent), which indicates that the variability of the timely project completion of the private building sector projects explained by the variability of the independent variables i.e. material related, equipment related, finance related, contractor related, client related and external related factors while, the remaining (16.1 percent) of the variability of the timely project completion of the private building construction project can be explained by other factors such as consultant, labor etc.

As table 4.20 depicts the result of multiple linear regressions of the six delay causing factors, the p-value of each hypothesis should be either accepted or rejected with reference to 5 (percent) level of significance; i.e. the hypothesis must be rejected if P-value is less than 0.05 otherwise accept it. Based on this five independent variables (material, equipment, finance, contractor, client & external related factors) have statistically significant effect on the timely project completion of private building with a P-Value of 0.000, 0.000, 0.021, 0.000, 0.000 & 0.003 respectively (Reject  $H_0$  if  $p < 0.05$ ). All independent variables have statically significant effect on timely project completion with p-value of

those listed above.

Interview results revealed that private building need good strategy or delay causing factors mitigation mechanism. Such as: strong management, properly investigating site condition, through giving necessary attention to design of ground work as well as foundation, through developing communication system with each stake holders, offering incentives for early completion, developing human resource and observing past performance contract.

## 5.2. Conclusion

- ❖ As the results of the descriptive statistics shows; most of the respondents gave positive response regarding how these factors highly affect timely project completion within the study area. Because most of the responses shows that strongly agree this implies that those six independent variables are affecting project on time completion.
- ❖ All independent variables have a positive and statistically significant correlation with timely project completion ranging “high” (5), and “little” (1) level of correlation.
- ❖ The pre-model fitting six assumptions (i.e., sample size, normality of distribution, linearity, multi co linearity of the variables, homoscedasticity, and independence of residuals) of multiple regressions are met accordingly.
- ❖ Multiple linear regression analysis (The R square) implies that about 83.9 (percent) shows that the six delay causing factors can determine the variation of the timely completion which means delay causing factors has influence on timely completion.
- ❖ The emphases are limited to Jimma town in five kebele six independent variable and one dependent variable.
- ❖ From all variables client related factor has the highest beta value which indicates the most dominant effect in determining the variation of timely project completion followed by equipment related factor with a beta values of ( $\beta_1 = 0.731$  &  $\beta_2 = 0.442$ ) respectively.
- ❖ The multiple linear regression analysis of the independent and dependent variables shows as the six explanatory variables have a statistically significant effect in determining project on time completion.
- ❖ Generally, for the commercial private building construction projects effectively and efficiently applying important strategy is a decisive one through considering the above mentioned variable.

A. Based on the literature reviews and the results of questionnaire responses; the followings are identified as potential factors affecting timely completion of private building construction projects.

- Material related factors which results shows shortage of construction material, poor quality of construction material, poor procurement material & late delivery of material.
- Equipment related factors which result shows insufficient equipment, frequent equipment breaks down, shortage of equipment part, use of improper equipment, slow mobilization of equipment, equipment allocation problem, and inadequate modern equipment.
- Finance relate which result shows inadequate fund allocation, contractors financial difficulties, existence of high interest rate, client financial difficulties, unreasonable financial constrains, delay payments to supplier/sub-contractor/, difficulty as to monthly payments,
- Contractors related which result shows poor site management, poor supervision, improper project planning & scheduling, insufficient contractors' experiences, inappropriate construction method, inaccurate time estimate, incompetent project team member, unreliable subcontractors & using of obsolete technology.
- Client related which shows slow decision making, lack of client's experience, change orders, client interference, absence of capable representatives, improper project feasibility study, lack of communication & coordination.
- External related results show inflation/price fluctuation, poor weather condition, problem with neighbors, price escalation, government regulations, and slow permit by government, civil/political disturbances, and low labor productivity.

### **5.3. Recommendations**

The delay causing factors on timely completion of private building constructions project in those five kebeles of the town are focused under this chapter. In light of the findings and conclusions made above, the following possible recommendations are suggested as being valuable to this construction sector for improving problems related to delay causing factors on timely project completion.

At all selected places with in the study areas on private building construction practices of delay causing factors (material related, equipment related, finance related, contractor related, client & external related) have to be enhanced in order to increase timely project completion. This can be enhanced and developed through the following:

Under this recommendation owners should: make fruitful project feasibility study; assigning good representatives; employ experienced contractors; make good communication; draw effective strategy for price escalation; be fast decision maker; allocate enough funds; assign adequate equipments; assure existence of equipment parts; avoid change orders; not interfere; solve neighbors related problems; assure adequacy; qualities & on time delivery of construction materials.

Contractors should: make effective planning; accurate time estimate; scheduling; follow appropriate construction methods; be dynamic with weather situation; create competent & qualified project team members; properly handle; mobilize; allocate project equipments; involve qualified & responsible sub-contractors; make effective training as well as smooth communication with workers in order to reduce low labor productivity; have to be financially ready; make monthly payments to workers; make on time payments & be good at site management as well as supervision.

The government should: give construction permission on time; reduce interest rate; also do in reduction of inflation or price fluctuation through propagating exporting system; at the end of this recommendation government should play pivotal role in order to settle peace and stability to avert improper work interruption.

Consultants should: not delay in responding to the queries and approval submitted by contractors' in relation to construction materials; prepare comprehensive financial design as well as review secession with owners before finalizing design & consultants should have deep rooted knowledge on the site conditions where the construction material is erected.

#### **5.4. Sugestion for further research**

It is clear that the current study incorporated only five areas (kebeles) in Jimma town on causes of delay with regard to private building constructions projects. Hence, other researchers should consider conducting elaborated research in the area by increasing the study areas (kebeles), the study population and the sample sizes.

It is observed that there exist some levels of unwillingness of the respondents while filling the questionnaire. Even if the negligence's of respondents were seen while conducting this particular study, this study was restrained mainly on primary sources of data. This is due to the fact that, unavailability as well as poor data handling of the construction office that could not able to use time series data in detail basis, hence other researcher might use time series data so as to analyze delay causing factors on timely project completion.

Finally, as the results of the regression analysis indicated, the delay causing factors components determine 83.9 (percent) of the timely project completion of the private building construction sector which indicates there are other factors which can explain the variability of the timely project completion of the sector. Hence, other researchers should consider such factors to find out or control delay causing factors that can affect timely project completion.



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# Appendices

## Appendix 1: Result of SPSS

### Appendix 1A: Sample Profile

#### Statistics

		Age	Educa- tional sta- tus	How long have you been worked in con- struction pro- jects	Respondent
N	Valid	54	54	54	54
	Missing	0	0	0	0

#### Frequencies

		Age	Educa- tional sta- tus	How long have you been worked in con- struction pro- jects	Respondent
N	Valid	54	54	54	54
	Missing	0	0	0	0

#### Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	19-28	22	13.0	40.7	40.7
	29-38	7	40.7	13.0	53.7
	39-48	14	25.9	25.9	79.6
	49 years and above	11	20.4	20.4	100.0
	Total	54	100.0	100.0	

#### Age distribution Category of Respondents

Age Category	Frequency	Valid Percentage (%)
18 years &below	0	0
19-28 years	7	13.0
29-38 years	22	40.7
39-48 years	14	25.9
49 years &above	11	20.4
Total	54	100.0



**Educational status**

	Frequency	Percent	Valid Percent	Cumulative Percent
primary school	3	5.6	5.6	5.6
secondary education complete	5	9.3	9.3	14.8
Certificate	7	13.0	13.0	27.8
Diploma	13	24.1	24.1	51.9
Degree	26	48.1	48.1	100.0
Total	54	100.0	100.0	

**Table 4.5: Education background; of Respondents.**

Education level	Frequency	Valid Percent
No normal education	0	0
Primary School	3	5.6
Secondary School Complete	5	9.3
Certificate	7	13.0
Diploma(TVET)	13	24.1
Degree	26	48.1
Masters &above	0	0
Total	54	100.0

**How long have you been worked in construction projects**

	Frequency	Percent	Valid Percent	Cumulative Percent
below one year	2	3.7	3.7	3.7
1-2 years	3	5.6	5.6	9.3
2-3 years	7	13.0	13.0	22.2
Valid 3-4 years	8	14.8	14.8	37.0
4-5 years	9	16.7	16.7	53.7
more than six years	25	46.3	46.3	100.0
Total	54	100.0	100.0	

**Table4. 6: Respondents job experience**

Category of job experience	Frequency	Percentage
Below one year	2	3.7

1-2 years	3	5.6
2-3 years	7	13.0
3-4 years	8	14.8
4-5 years	9	16.7
More than 6 years	25	46.3
Total	54	100.0

**Areas of construction**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Hermata Mendera	14	30.6	30.6	30.6
Ginjo Guduru	12	26.6	26.6	26.6
Bacho Bore	10	22.6	22.6	22.6
Awetu Mendera	9	10.1	10.1	10.1
Mentina Kochi	9	10.1	10.1	10.1
Total	54	100.0	100.0	100.0

**Table4.1: Response Rate of the Questionnaire.**

No.	Areas of construction (kebele)	Questionnaire distributed	Questionnaire responded	Response rate (%)
1	Hermata Mendera	16	14	87.5
2	Ginjo Guduru	13	12	92.3
3	Bacho Bore	10	10	100
4	Awetu Mendera	11	9	81.8
5	Mentina Kochi	10	9	90
	Total	60	54	90.3≈90

**Respondent**

	Frequency	Percent	Valid Percent	Cumulative Percent
Owner	20	37.0	37.0	37.0
Contractor	15	27.8	27.8	64.8
Valid owners Representative	16	29.6	29.6	94.4
Consultant	3	5.6	5.6	100.0
Total	54	100.0	100.0	

**4.2. Sample Characteristics.**

Category of Respondents	Frequency	Valid Percentage
Owner	20	37.0
Contractor	15	27.8
Owners Representative	16	29.6
Consultant	3	5.6
Total	54	100.0

**Appendix 1B: Reliability test; Pilot Survey**

**Scale: Communication**

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
.907	4

**Reliability Statistics**

Cronbach's Alpha	N of Items
.880	7

**Reliability Statistics**

Cronbach's Alpha	N of Items
.917	7

**Reliability Statistics**

Cronbach's Alpha	N of Items

.949	9
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**Reliability Statistics**

Cronbach's Alpha	N of Items
.882	7

**Reliability Statistics**

Cronbach's Alpha	N of Items
.898	9

**Reliability Statistics**

Cronbach's Alpha	N of Items
.701	6

**Appendix 1C: Descriptive statistics of the variables**

**Table4.7. Respondents perception toward material related factors**

Material Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
MR1	The shortages of construction material can affect timely completion of building construction project	0	25.9	9.3	40.7	24.1
MR2	The poor qualities of construction materials have Negative Effects on timely completion of building construction projects	1.9	0	22.2	13.0	63.0
R3	The poor procurement material situations have contribution as to the delay of building construction project	11.1	1.9	9.3	77.8	0
MR4	The late delivery of material can affect on time completion of building construction project	9.3	11.1	0	13.0	66.7
	Average grand point%	5.58	9.73	10.2	36.13	38.45

**Table4.8. Respondents perception toward equipment related factors**

Equipment Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
EQR1	Insufficient numbers of equipment have no effect as to the timely completion of building construction projects	27.8	9.3	0	63.0	0
EQR2	Frequent equipment break down have negative effects on the schedule of building construction projects	9.3	13.0	0	14.8	63.0
EQR3	Shortage of equipment parts will indirectly extend the schedule of building construction projects	0	20.4	14.8	64.8	0
EQR4	Using improper equipment will contribute building construction project delay	11.1	0	9.3	27.8	51.9
EQR5	Slow mobilization of equipment can result building construction project delay	9.3	0	0	48.1	42.6
EQR6	Equipment allocation problem can cause building construction project time overrun	13.0	22.2	13.0	14.8	37.0
EQR7	Inadequate modern equipment may cause building construction project delay	0	13.0	9.3	61.1	16.7
	Average grand point%	10.07	11.13	6.63	42.06	30.17

**Table 4.9, Respondents perception towards finance related factors**

Finance Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
FR1	In adequate fund allocation have negative effect on the timely completion of building	9.3	0	13.0	29.6	48.1

	construction project					
FR2	Contractor financial difficulty may cause building construction project time overrun	1.9	20.4	0	50.0	27.8
FR3	The existence of high interest rate can cause building construction project delay	13.0	13.0	22.2	14.8	37.0
FR4	Clients financial difficulties can cause building construction project time overrun	22.2	0	0	33.3	44.4
FR5	Unreasonable finance constraints to client can cause building construction project delay	0	22.2	14.8	14.8	48.1
FR6	The delay payments to suppliers/ sub-contractors/ cause building construction project delay	0	0	22.2	46.3	31.5
FR7	The difficulties as to monthly payment may cause building construction project delay	20.4	0	0	44.4	35.2
	Average grand point%	9.54	7.94	10.31	33.31	38.87

**Table 4.10, Respondents perception towards contractor related factors**

Contractor Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
CR1	Poor site management affect on time completion of building construction project	11.1	9.3	0	33.3	46.3
CR2	Poor supervision of building construction project causes delay	13.0	0	22.2	27.8	37.0
CR3	Improper project planning and scheduling will result time overrun	9.3	13.0	0	20.4	57.4
CR4	Inadequate contractors experience can be factors for a delay in building construc-	0	9.3	13.0	16.7	61.1

	tion project					
CR5	Inappropriate construction methods will bring building construction project delay	11.1	0	9.3	35.2	44.4
CR6	Inaccurate time estimate will result building construction project delay.	20.4	0	0	40.7	38.9
CR7	Incompetent project team members can be a factor as to the delay of building construction project	13.0	9.3	0	33.3	44.4
CR8	Unreliable sub contractor will cause delay of building construction project	0	13.0	9.3	40.7	37.0
CR9	Using obsolete technology will bring building construction project delay	9.3	0	25.9	24.1	31.5
	Average grand point%	9.69	5.99	8.86	30.24	44.22

**Table 4.11, Respondents perception towards Client related factors**

Client Related		Percentage of respondents%				
	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
CLR1	Slow decision making by client will cause building construction project delay	11.1	9.3	0	38.9	40.7
CLR2	Lack of experience by client in building construction project will cause time overrun	11.1	0	9.3	37.0	42.6
CLR3	Change orders can cause building construction project delay	22.2	0	0	24.1	53.7
CLR4	Client interference will affect negatively on the timely completion of building construction projects	0	35.2	0	25.9	38.9
CLR5	Lack of capable representatives will causes building construction project de-	0	0	22.2	11.1	66.7

	lay					
CLR6	Lack of communication and coordination will causes building construction project delay	9.3	11.1	0	27.8	51.9
CLR7	Improper project feasibility study will have negatively effect on the timely completion of building construction projects	0	0	9.3	22.2	68.5
	Average grand point%	7.67	7.94	5.83	26.71	51.86

**Table 4.13, Respondents perception towards external related actors**

External Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
EXR1	Inflation/price fluctuation/ will bring building construction project delay	20.4	0	0	27.8	51.9
EXR2	Poor weather condition will cause building construction project delay	0	0	13.0	11.1	75.9
EXR3	Problem with neighbors will causes building construction project delay	9.3	24.1	13.0	37.0	16.7
EXR4	Price escalation will cause building construction project delay	14.8	0	9.3	11.1	64.8
EXR5	Low labor productivity will cause building construction project delay	9.3	13.0	14.8	48.1	14.8
EXR6	Government regulations will bring building construction project delay	13.0	22.2	14.8	11.1	38.9
EXR7	Slow permit by government will cause building construction project delay	13.0	0	11.1	50.0	25.9



EXR8	Civil/political disturbances will affect negatively on the timely completion of building construction projects	9.3	13.0	0	14.8	63.0
ER 9	Acts of God will cause building construction project delay	0	0	22.2	37.0	40.7
	Average grand point%	9.9	8.03	10.91	27.26	37.86

**Table 4.13, Respondent perceptions toward timely project completion**

Time Related		Percentage of respondents%				
NO	Types of Variable	Strongly disagree	disagree	Undecided	agree	Strongly agree
TM 1	Timely completion of private building construction projects can be affected; when material related factors are insufficient.	11.1	9.3	0	38.9	40.7
TM 2	Timely completion of private building construction projects can be negatively influenced; when equipment related factors are not fulfilled.	11.1	0	9.3	37.0	42.6
TM 3	Timely completion of private building construction projects can be affected; when finance related factors are inadequate.	22.2	0	0	24.1	53.7
TM 4	Timely completion of private building construction projects can be negatively influenced; when problems of contractor related factors are not solved.	0	35.2	0	25.9	38.9
TM 5	Timely completion of private building construction projects can be affected; if the problems of client related factors are	0	0	22.2	11.1	66.7

	not properly averted.					
TM 6	Timely completion of private building construction projects can be negatively influenced; if external related factors cannot be controlled.	9.3	11.1	0	27.8	51.9
	Average grand point%	7.67	7.94	5.83	26.71	51.86

### Appendix 1D: Correlation (2-tailed)

Correlations								
		TML	MR	EQR	FR	CR	CLR	EXR
TML	Pearson Correlation	1	.470**	.669**	.507**	.572**	.775**	.381**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.005
	N	54	54	54	54	54	54	54
Material	Pearson Correlation	.470**	1	.772**	.610**	.557**	.724**	.344*
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.011
	N	54	54	54	54	54	54	54
EQR	Pearson Correlation	.669**	.772**	1	.707**	.714**	.754**	.436**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.001
	N	54	54	54	54	54	54	54
FR	Pearson Correlation	.507**	.610**	.707**	1	.513**	.774**	.524**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	54	54	54	54	54	54	54
CR	Pearson Correlation	.572**	.557**	.714**	.513**	1	.675**	.524**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	54	54	54	54	54	54	54
CLR	Pearson Correlation	.775**	.724**	.754**	.774**	.675**	1	.541**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	54	54	54	54	54	54	54
EXR	Pearson Correlation	.381**	.344*	.436**	.524**	.524**	.541**	1
	Sig. (2-tailed)	.005	.011	.001	.000	.000	.000	
	N	54	54	54	54	54	54	54
**. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed).								

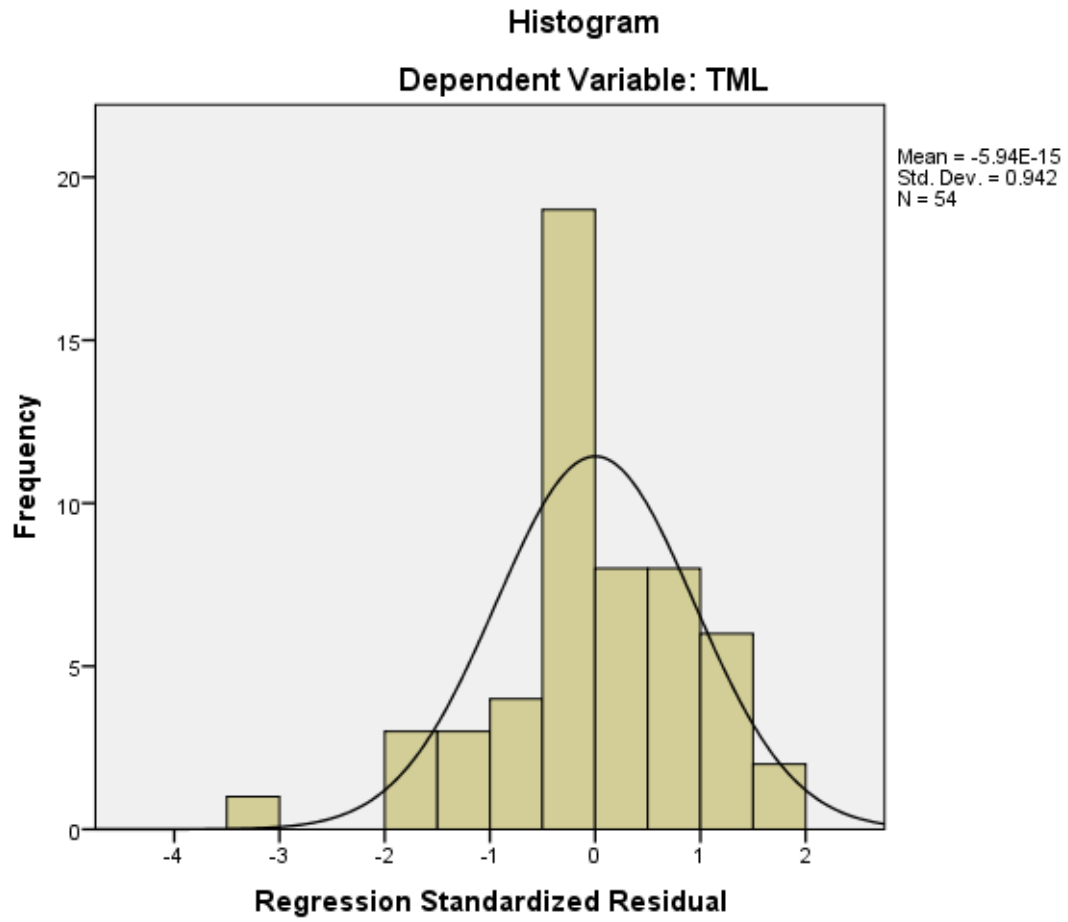
**Appendix 1E: Model Summary, ANOVA & Regression coefficients.**

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1		.839	.818	.33775	1.986
a. Predictors: (Constant), material related, equipment related, finance related, contractor related, client related, external related factors					
b. Dependent Variable: Project timely completion					

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.908	6	4.651	40.774	.000 <sup>b</sup>
	Residual	5.362	47	.114		
	Total	33.270	53			
a. Dependent Variable: project timely completion						
b. Predictors: (Constant), material, equipment, finance, contractor, client & external related factors						

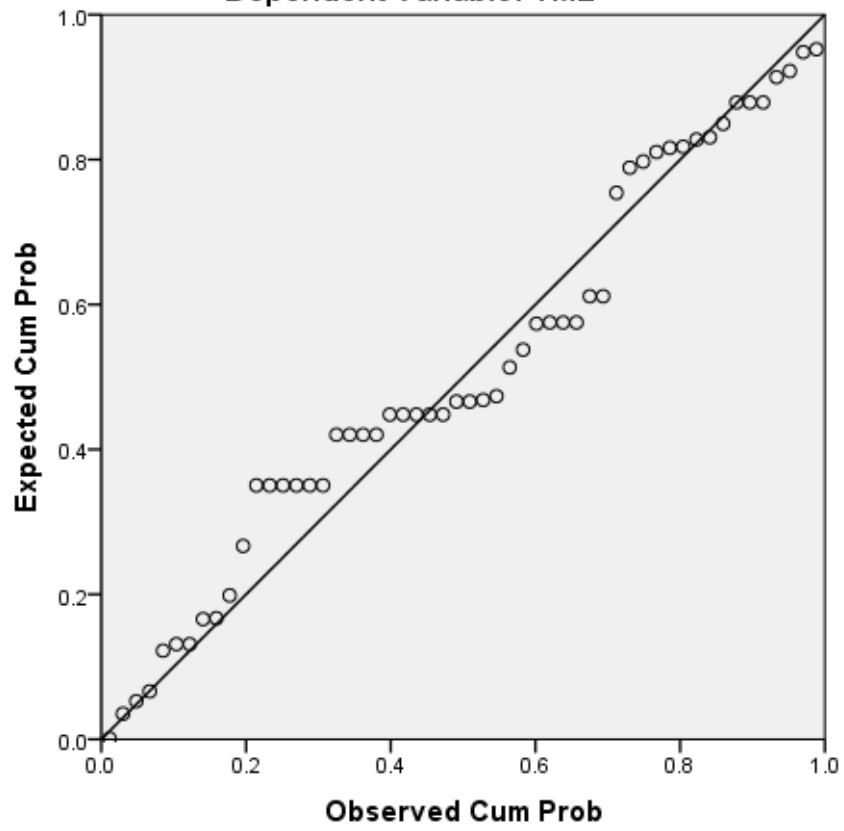
Coefficients <sup>a</sup>					
Independent Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.164	.237		9.124	.000
Material related	.350	.081	.434	-4.353	.000
Equipment related	.442	.099	.553	4.489	.000
Finance related	.163	.087	.196	-1.877	.021
Contractor related	.026	.068	.034	.382	.000
Client related	.731	.079	.996	9.263	.000
External related	.209	.077	.232	-2.713	.003
a. Dependent variable: project timely completion					

## Appendix 1F: Charts



Normal P-P Plot of Regression Standardized Residual

Dependent Variable: TML



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**Appendix 1A**  
**JIMMA UNIVERSITY**  
**COLLEGE OF BUSINESS & ECONOMICS**  
**DEPARTMENT OF ACCOUNTING & FINANCE**  
**M.A.IN PROJECT MANAGEMENT & FINANCE**

**Questionair**

**Dear Respondents**

My name is **Dejene Derese**. I am currently doing my MA. In Project Management and Finance at Jimma University, College of Business and Economics. Now I am doing my MA. Research project entitled: *“Factors Affecting Timely Completion of Commercial Private Building Construction Projects in Jimma Town”*.

I believe your experience or educational back ground or both of them will greatly contribute to the success of my research. So, it is with great respect that I ask you to fill this questionnaire. I guarantee that your identity will be kept confidential and the information you provide only can be used for academic purpose. Will; be happy to share the findings of this research when it is completed.

Thank you in advance for taking your precious time to fill this questionnaire. Please try to answer all the questions openly, as your answer will have an influence on the outcome of the research. Your 30 minutes or less will greatly contribute to the; and advancement of knowledge in the construction and private building industry.

If you have any question or comments, please don't hesitate to contact me. You can reach me by;  
Mobile: 0917056839

E-mail: [dejenederese7@gmail.com](mailto:dejenederese7@gmail.com)

Thank you in advance for your willingness in providing valuable data!

Dejene Derese

**Study title: Factors Affecting Timely Completion of Commertial Private Building Construction Projectsin Jimma Town.**

The questions below are related to your projects profile and experience in

Construction claims. Please indicate by filling the blank or by putting mark in the appropriate box

**SECTION ONE: - General Information**

The answers you will provide here are helpful only for academic purpose.

Inthissection, we are interested in your background in brief.PleaseTICK (✓) your answer in thegrid.

**1. Areas of construction:** Hermata mendera  Ginjo guduru  Bacho bore  Awetu mendera  Mentina Kochi

**2. Gender:** Male  Female

**3. Age Group:** 18 years and below  19-28 Years  29-38 Years  39-48 Years  49 Years and above

**4. Educational status:** no normal education  Primary School  Secondary Education complete  Certificate  Diploma (TVET)  Bachelor Degree  Masters and above

**5. How long have you been worked in construction projects?** Below one year  1-2 years  2-3 years  3-4 years  4-5 years  More than 6 years

**6. Respondent:** owner  contractor  owners' representative  consultant  government controlling body

## SECTION TWO: Causes of Project Delay

**Please rank the delay causing factors below in what you consider to be.**

The major factors that affect timely completion of private building construction projects are listed below. Please indicate the degree to which these factors affect the the timely completion of private buildings construction projects. After you read each of the fators, evaluate them in relation to your business and show using number; Where, 1=

Strongly disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=strongly agree

**Please indicate the degree which you agree with the following variables**

NO	Material related	1	2	3	4	5
MR1	The shortages of construction material can affect timely completion of building construction project	1	2	3	4	5
MR2	The poor qualities of construction materials have Negative Effects on timely completion of building construction projects	1	2	3	4	5

R3	The poor procurement material situations have contribution as to the delay of building construction project	1	2	3	4	5
MR4	The late delivery of material can affect on time completion of building construction project	1	2	3	4	5

NO	Equipment related	1	2	3	4	5
EQR1	Insufficient numbers of equipment have no effect as to the timely completion of building construction projects	1	2	3	4	5
EQR2	Frequent equipment break down have negative effects on the schedule of building construction projects	1	2	3	4	5
EQR3	Shortage of equipment parts will indirectly extend the schedule of building construction projects	1	2	3	4	5
EQR4	Using improper equipment will contribute building construction project delay	1	2	3	4	5
EQR5	Slow mobilization of equipment can result building construction project delay	1	2	3	4	5
EQR6	Equipment allocation problem can cause building construction project time overrun	1	2	3	4	5
EQR7	Inadequate modern equipment may cause building construction project delay	1	2	3	4	5

NO	Finance related	1	2	3	4	5
FR1	In adequate fund allocation have negative effect on the timely completion of building	1	2	3	4	5



	construction project					
FR2	Contractor financial difficulty may cause building construction project time overrun	1	2	3	4	5
FR3	The existence of high interest rate can cause building construction project delay	1	2	3	4	5
FR4	Clients financial difficulties can cause building construction project time overrun	1	2	3	4	5
FR5	Unreasonable finance constraints to client can cause building construction project delay	1	2	3	4	5
FR6	The delay payments to suppliers/ sub-contractors/ cause building construction project delay	1	2	3	4	5
FR7	The difficulties as to monthly payment may cause building construction project delay	1	2	3	4	5

NO	Contractor Related	1	2	3	4	5
CR1	Poor site management affect on time completion of building construction project	1	2	3	4	5
CR2	Poor supervision of building construction project causes delay	1	2	3	4	5
CR3	Improper project planning and scheduling will result time overrun	1	2	3	4	5
CR4	Inadequate contractors experience can be factors for a delay in building construction project	1	2	3	4	5
CR5	Inappropriate construction methods will bring building construction project delay	1	2	3	4	5
CR6	Inaccurate time estimate will result building construction project delay.	1	2	3	4	5

CR7	Incompetent project team members can be a factor as to the delay of building construction project	1	2	3	4	5
CR8	Unreliable sub contractor will cause delay of building construction project	1	2	3	4	5
CR9	Using obsolete technology will bring building construction project delay	1	2	3	4	5

	Client Related	1	2	3	4	5
CLR1	Slow decision making by client will cause building construction project delay	1	2	3	4	5
CLR2	Lack of experience by client in building construction project will cause time over-run	1	2	3	4	5
CLR3	Change orders can cause building construction project delay	1	2	3	4	5
CLR4	Client interference will affect negatively on the timely completion of building construction projects	1	2	3	4	5
CLR5	Lack of capable representatives will causes building construction project delay	1	2	3	4	5
CLR6	Lack of communication and coordination will causes building construction project delay	1	2	3	4	5
CLR7	Improper project feasibility study will have negatively effect on the timely completion of building construction projects	1	2	3	4	5

NO	External Related	1	2	3	4	5
EXR 1	Inflation/price fluctuation/ will bring building construction project delay	1	2	3	4	5
EXR 2	Poor weather condition will cause building construction project delay	1	2	3	4	5
EXR 3	Problem with neighbors will causes building construction project delay	1	2	3	4	5
EXR 4	Price escalation will cause building construction project delay	1	2	3	4	5
EXR 5	Low labor productivity will cause building construction project delay	1	2	3	4	5
EXR 6	Government regulations will bring building construction project delay	1	2	3	4	5
EXR 7	Slow permit by government will cause building construction project delay	1	2	3	4	5
EXR 8	Civil/political disturbances will affect negatively on the timely completion of building construction projects	1	2	3	4	5
ER 9	Acts of God will cause building construction project delay	1	2	3	4	5

NO	Time Related	1	2	3	4	5
TM 1	Timely completion of private building construction projects can be possible; when the difficulties of material related factors gate corrections.	1	2	3	4	5
TM 2	Timely completion of private building con-	1	2	3	4	5

	struction projects can be realized; when equipment related factors are evitable.					
TM 3	Timely completion of private building construction projects can be effective; when the impact of finance related factors are avoided.	1	2	3	4	5
TM 4	Timely completion of private building construction projects can be succeeded; when problems of contractor related factors are solved.	1	2	3	4	5
TM 5	Timely completion of private building construction projects can be achieved; if the problems of client related factors are properly averted.	1	2	3	4	5
TM 6	Timely completion of private building construction projects can meet its target; if external related factors are not become obstacle.	1	2	3	4	5

2.1) if you have comment regarding the causes of delay and/or their importance please specify here;

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**JIMMA UNIVERSITY**  
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**DEPARTMENT OF ACCOUNTING & FINANCE**  
**M.A.IN PROJECT MANAGEMENT & FINANCE**

**Interview Questions**

1. How can be delay measured?
2. Are there delays with in the study area?
3. What are the factors that affect on time completion?
4. How delay can affect the projects?
5. Do you think delay have negative effects on on parties into the contract?
6. Do you think the interruption of construction work necessarily shows project delay?
7. Are there enough project controlling & evaluation with respect to project ontime completion in the study area?
8. Are there any strategies you think that can reduce project delay?
9. What do you recommend to improve project delay?

**Thank you for your valuable and in-depth information**

በጅማ ዩኒቨርሲቲ

ቢዝነስና ኢኮኖሚክስ ኮሌጅ

የአካውንቲንግ እና ፋይናንስ ትምህርት ክፍል :

ማስተር :በፕሮጀክት ማናጅመንት እና ፋይናንስ

መጠይቅ

- የተከበራችሁ መላሾች

ስሜ ደጀኔ ደረሴ እባላለሁ እኔ በዚህ ሰዓት ሁለተኛ ዲግሪዬን በፕሮጀክት ማናጅመንት እና ፋይናንስ በምለው የትምህርት ዘርፍ በጅማ ዩኒቨርሲቲ በቢዝነስና ኢኮኖሚክስ ኮሌጅ ውስጥ እየተከታተልኩኝ እገኛለሁ :: ከዚህ ጋር በተያያዘ አሁን በዚህ ሰዓት ጥናቴን በጅማ ከተማ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ውስጥ እንዳይጠናቀቁ የሚያደርጉ ምክንያቶች በሚል ሪዕስ እየሰራው ስለ ሆነየናንተ ልምድም ሆነ ያላችሁት የትምህርት እውቀት ለጥናቴ ውጤታማነት ጉልህ ድርሻ አለው ብዬ ስላመንኩኝ እናነተም የቀረቡትን መጠይቆችን እንድትሞሉልኝ ከትልቅ አክብሮት ጋር እጠይቃችኋለሁ :: በዚህ የመጠይቅ አሞላል ህደት ውስጥ የግል ሚስጥራት የሚጠበቅ ይሆናል :: እንዲሁም እናንቱ የሰጣችሁት የመጠይቅ መልስ ለትምህርት አላማ ብቻ እንደምውል ቃል እገባላችኋለሁ :: እናንቱ ፍላጎት ካላቸው መጨረሻ ላይ ጥናቴን ላጋራችሁ ፈልጋለሁ ::

በጣም አመሰግናለሁ ካላቸው ጊዜ አካፍላችሁ የመጠየቁ ስለ ሰጣችሁኝ

-ከይቅርታ ጋር የቀረቡትን ጥያቄዎች ሁሉ ግልፅ በሆነ መንገድ ለመመለስ ሞክሩ ምክንያቱም የሰጣችሁትን መልስ በጥናቴ ውጤት ላይ ጉልህ ተፅኖ አለውና ::

-ይሄ ሰላሳ /30/ ደቂቃ ስለ ግል ህንፃ ፕሮጀክቶች ለቀረቡት ጥያቄዎች በቂ ነው ተብሎ ስለታሰበ ነው ::

-ጥያቄ ወይም ሐሳብ ካላቸው ከዚህ በታች በተቀመጠው ስልክ ቁጥር ወይም ኢ. ሜል ልታገኙኝ ትችላላችሁ ::

- ስልክ 09 17 05 68 39
- ኢ.ሜል [dejenederese7@gmail.com](mailto:dejenederese7@gmail.com)
- ክፍል አንድ :- አጠቃቀም መረጃ
- ከዚህ በታች የሰጣችሁት መልስ ለትምህርት አላማ ብቻ ይውላል በዚህ ክፍል ውስጥ ታሪክ ግልፅ በሆነ ሁኔታ ጥቀሠው እባክህን የመልስህን ምልክት በማድረግ ( ) አሳይ

1. ስም ህን \_\_\_\_\_

2. ያታ : ወ

3. የዕድሜ ክልል :18 አመትና ከዛ በ 19-

- ከ29-38 አ ከ39-48 አ 49 አመትና ከዚያ በላይ

ለምን ያህል ጊዜ ነው የግንባታ ፕሮጀክቶች ውስጥ የሰራህ 1 አመት እና በታች 1

-2 አመት  - 4 አመት  አመትና ከዚያ በ

6. መ ባለ ህንፃ  ኮንትራክተር  ባለ ህንፃተኛ ወይ  ማካሪ ተቆጣጣሪ ነኝ

**እባክህን የምትስማማውን ደረጃ አሳይ**

ተ.ቁ	ከግንባታ <input type="checkbox"/> <input type="checkbox"/> ስራ ጋር በተገናኘ	1	2	3	4	5
1	የግንባታ <input type="checkbox"/> <input type="checkbox"/> ስራ አቅራቢት <input type="checkbox"/> ጥራት ያለ መኖር የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ውስጥ <input type="checkbox"/> እንዳይጠናቀቁ ያደርገዋል::	1	2	3	4	5
2	የግንባታ <input type="checkbox"/> <input type="checkbox"/> ስራ ጥራት ማጣት የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> ስራ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5

3	የግንባታ ስራ ሁኔታ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ስለሚገኝ ለአንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
4	የግንባታ ስራ በተፈለገበት ጊዜ ያለ መቅረብ የግል ህንፃ ፕሮጀክቶች በተፈቀደለት ጊዜ ስለሚገኝ ለአንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5

ተ.ቁ	ከመገልገያ ቁሶች ጋር በተገናኘ	1	2	3	4	5
1	የመገልገያ ቁሶች በቂ ያለመሆናቸው የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ስለሚገኝ ለአንዳይጠናቀቁ ያደርጋቸዋል::	1	2	3	4	5
2	የመገልገያ ቁሶች መበላሸት እና መሰባሰብ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ስለሚገኝ ለአንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
3	የምንገለገልባቸው የቁስ አካል ለአጥረት/መጥፋት/ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ውስጥ ስለሚገኝ ለአንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
4	ትክክለኛ ያልሆነ የመገልገያ ቁሶችን መጠቀም የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ስለሚገኝ ለአንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
5	የተቀናጁ መገልገያ ቁሶች መጥፋታቸው የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ስለሚገኝ ለአንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
6	የመገልገያ ቁሶች የአጠቃቀም ችግር የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ስለሚገኝ ለአንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
7	በቂ መጠን ቁሶች ያለመኖራቸው የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ስለሚገኝ ለአንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5



	<input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::					
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ተ.ቁ	ከገንዘብ ጋር በተገናኘ	1	2	3	4	5
01	በቂ የልሆነ ገንዘብ / በጀት / የለመየዙ የግል ህንፃ ፕሮጀክቶች በተቀመጠለት ጊዜ ገደብ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋል	1	2	3	4	5
2	ለ <input type="checkbox"/> በር እጥረት ኮንትራክተርን ማጋጠሙ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ <input type="checkbox"/> በ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋል	1	2	3	4	5
3	<input type="checkbox"/> በር እጥረት ኮንትራክተርን መጋጠሙ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ውስጥ ንዳይጠናቀቁ ያደርጋል: . .	1	2	3	4	5
4	የብድር ወለድ ከፍተኛ መሆኑ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋል	1	2	3	4	5
5	ደንበኛን ምክናታው ያልሆነ መሰናክል ማጋጠሙ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ውስጥ <input type="checkbox"/> እንዳይጠናቀቁ <input type="checkbox"/> በ <input type="checkbox"/> ል ::	1	2	3	4	5
6	ለ አቅራቢዎች ንዕስ ኮንትራክተሮች ገንዘቡን በጊዜ ያለ መክፈል የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ውስጥ <input type="checkbox"/> እንዳይጠናቀቁ <input type="checkbox"/> በ <input type="checkbox"/> ል	1	2	3	4	5
7	ወራዊ ክፍያን ያለ መክፈል የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ውስጥ <input type="checkbox"/> ንዳይጠናቀቁ ያደርጋል ::	1	2	3	4	5

ተ.ቁ	ከኮንትራክተር ጋር በተገናኘ	1	2	3	4	5
1	የኮንትራክተሩ አስተዳደሩ ሁኔታ ደካማ መሆን የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቅ ያደርጋል ::	1	2	3	4	5

2	የኮንትራክተር ቁጥጥር ሁኔታ ካማ መሆን የግል ህንፃ ጸሮጀክቶች በተቀመጠላቸው ጊዜ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋል ::	1	2	3	4	5
3	የፕሮጀክት እቅድና የእያንዳንዱ ተግባራት የምፈፀሙበት በጊዜ ያለ መቀመጡ <input type="checkbox"/> ል ህንፃ ጸሮሀደክቶተ በተቀመጠላቸው ጊዜ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋል ::	1	2	3	4	5
4	የኮንትራክተር ልምድ በቂ የለ መሆን የግል ህንፃ ፕሮጀክቶተ በተቀመጠላቸው ጊዜ ወስጥ እንዳይጠናቀቁ ያደርጋል ::	1	2	3	4	5
5	ትክክለሃ ያልሆነ የግንባተ ሁኔታን መከተለ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋል	1	2	3	4	5
6	ግንባታው ተከናውኖ የምጠናቀቅበት የጊዜ ዐመት ትክክል ያለ መሆኑ የግል ህንፃ ጸሮጀክቶተ በተቀመጠላቸው ጊዜ ገደብ ውስጥ እንዳይጠናቀቁ ያደርጋል	1	2	3	4	5
7	የፕሮጀክቱ ስብሰብ አባላት ተወዳዳሪ ያለ መሆናቸው የግል ህንፃ ፕሮጀክቶተ በተቀመጠላቸው ጊዜ ገደብ ውስጥ እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
8	በፕሮጀክቱ ውስጥ የምሳተፋ ንዑስ ኮንትራክተሮተ አስተማማኝ የለ መሆናቸው የግል ህንፃ ፕሮጀክቶተ በተቀመጠላቸው ጊዜ <input type="checkbox"/> ዘ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
9	የቆሎ ቴክኖሎጂን መጠቀም የግል ህንፃ ፕሮጀክቶተ በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5

ተ.ቁ	ክደንበኛ ጋር በተያያዘ <input type="checkbox"/>	1	2	3	4	5
1	የደንበኛ ውሳኔ ደካማ መሆን የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
2	የደንበኛ ልምድ ማጣት-የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ውስጥ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5

3	የደንበኛ ፊላንት መለዋወጥ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
4	የደንበኛ በግንባታ ስራ ውስጥ ልቃ መግባቱ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ውስጥ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
5	ደንበኛው ጠንካራ ተወካይ ማጣቱ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
6	ደንበኛው የመናገር ሆነ የማቀናጀት ችሎታ ማጣት የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
7	በደንበኛ በሚረጋገጥ <input type="checkbox"/> <input type="checkbox"/> ስራ አፈጻጸም ጥናት ትክክል ያለ መሆኑ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5

ተ.ቁ	ከውጫዊ አካል ጋር በተገናኘ	1	2	3	4	5
1	<input type="checkbox"/> በር ሻ <input type="checkbox"/> መሻ <input type="checkbox"/> ቅ / ቁሻሚ / <input type="checkbox"/> ለ መሆኑ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
2	ያልተፋጠነ የቦታ <input type="checkbox"/> ማስተካከያዎች የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
3	አመቺ ያልሆነ የአየር ሁኔታ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5
4	ከጎረቤት ጋር ያለው ችግር የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> -ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ::	1	2	3	4	5

5	የዋጋ ንረት የግል ህንፃፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ውስጥ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ።	1	2	3	4	5
6	የአየር ሁኔታ <input type="checkbox"/> አመቺ ያለመሆኑ የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ።	1	2	3	4	5
7	አሰሪና ሰራተኛ /ሰራተኛና ሰራተኛ/ መጠጫ ታቸው የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ ውስጥ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ።	1	2	3	4	5
8	መንግስት የሚያወጣቸው ደንቦች የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ።	1	2	3	4	5
9	የመንግስት አካላት ፍቃድን በተፋጠነ ሁኔታ <input type="checkbox"/> ለመስጠት ታቸው የግል ህንፃ ፕሮጀክቶች በተቀመጠላቸው ጊዜ ገደብ <input type="checkbox"/> ስ <input type="checkbox"/> እንዳይጠናቀቁ ያደርጋቸዋል ።	1	2	3	4	5

ተ.ቁ	የግል ህንፃ ፕሮጀክቶች በጊዜ መጠናቀቅ	1	2	3	4	5
1	የግል ህንፃ ፕሮጀክቶች በጊዜ መጠናቀቅ ከሚችሉባቸው ዋነኛው ሁኔታዎች ከግንባታ ጥራት ጋር በተያያዘ ያለው ነገር ጥሩ ሲሆን ነው።	1	2	3	4	5
2	የግል ህንፃ ፕሮጀክቶች በጊዜ መጠናቀቅ ከሚችሉባቸው ዋነኛው ሁኔታዎች ፕሮጀክቶች ከመገልገያ ቁሶች ጋር በተያያዘ ያለው ነገር ጥሩ ሲሆን ነው።	1	2	3	4	5
3	የግል ህንፃ ፕሮጀክቶች በጊዜ መጠናቀቅ ከሚችሉባቸው ዋነኛው ነገሮች ከገንዘብ ጋር በተጠቃሚ ሁኔታዎች ጥሩ ሲሆን ነው።	1	2	3	4	5
4	የግል ህንፃ ፕሮጀክቶች በጊዜ መጠናቀቅ ከሚችሉባቸው ዋነኛው ነገሮች	1	2	3	4	5

	ከኮንትራክተር <input type="checkbox"/> ር በተያያዘ <input type="checkbox"/> ለ <input type="checkbox"/> ነገር <input type="checkbox"/> ፍ ሲሆን ነው።					
5	የግል ህንፃ ፕሮጀክቶች በጊዜ መጠናቀቅ ከሚችሉባቸው ዋነኛ-ሁኔታዎች ከደንበኛ ጋር በተገኘ <input type="checkbox"/> ለ <input type="checkbox"/> ነገር ጥሩ ሲሆን ነው።	1	2	3	4	5
6	የግል ህንፃ ፕሮጀክቶች በጊዜ መጠናቀቅ ከሚችሉባቸው ዋነኛ-ሁኔታዎች ከውጫዊ አካል ጋር በተያያዘ ያለው ነገር ጥሩ ሲሆን ነው።	1	2	3	4	5

2.1. ፕሮጀክቶች በግዜ ያለመጠናቀቅን በተመለከተ ጠቃሚ ሀሳብ ወይም ምክር ካልዎት

ለ  /  ለ

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ስለ ትብብራችሁ ሁሉ እጅግ አድርጌ አመሰግናለሁ!

**Maxxansa 1 C (Afaan Oromiffaatiin)**

**JIMMAA YUUNIVARSIITII**  
**KOOLLEJJII BIIZINASII FI IKOONOOMIKSII**  
**MUUMMEE AKKAAWONTIINGII FI FAAYINAANSII**  
**SAGANTAA BARNOOTA MAASTARSII:**  
**PROJEKT MAANAAJIMANTII FI FAAYINAANSII**  
**Gaaffilee**

**Kabajamtoota deebii kennitootaaf**

Maqaan koo Dajanee Darraseen jedhama. Ani yeroo ammaa kana digirii lammaffaakoo gosa barnoota Proojekti Maanaajimantii fi Faayinaansii kan jedhamuun Yuuniivarsiitii Jimmaati, koolleejjii Biizinasii fi Ikoonoomiksii keessatti kanan barataa jiru yemmuun ta'u; yeroo ammaa kana qorannoo/riisarchii/ koo kan mataduree isaa Sababoota proojektiin gamoo dhuunfaa magaala Jimmaa keessatti argaman akka yeroon hin xumuramne godhan qorachuu kan illalatu ta'a. Haaluma kanaan .muuxannoon yookaan seenaan barnoota keessanii haala gaarii ta, een qorannoon koo akka galma ga'uuf nagargaara jedheen waanan amaneef kabaja guddaa wajjiniin akka gaaffilee armaan gadii naaf deebistan isin gaafadha. Adeemsa fudhannaa fi kennuu deebii gaaffilee armaan gaditti dhiyaataniif eenyummaafi infoormishiiniin nama deebii armaan gaditti dhiyaate kana deebisuuf iccitiin isaa/ishee kan eegamu ta'uusaa fi akkasumas kan dhimma barnootaa qofaaf oolu akka ta'e waadaa kanan siniif galuu fi wabii siniif ta'uu koo ibsuun barbaada. Yoo sin fedhii qabaattan dhumarratti firii qorannoo kanaa siniif laachuuf fedhiin koo olaanaadha.

Guddaa galatoomaa yeroo qabdan irraa naa laattanii gaaffilee dhiyaatan naa guutuuf fedha qabaachuu keessaniif. Dhiifamaa wajjin gaaffilee dhiyaatan hundasaanii haala ifa ta'een deebisuuf yaalaa. Sababni isaas deebii isin deebistanu firii qorannoo kanaa irratti dhiibbaa qaba waan ta'eefi. Yeroon keessan daqiiqaan Sooddomni/30/ yookaan isaa gadi waa'eebeekumsa proojektii gamoo dhuunfaa gaaffilee dhiyaataniin wal qabatee ga'aadha jedhamee kan yaadameedha.

Yoo gaaffii qabattan yookan yaada qabaattan lakkoofsa bilbila yookaan E-mailii kanaan na argachuu ni dandeessu. Bilbila: 0917056839

E-mail: [dejenederese7@gmail.com](mailto:dejenederese7@gmail.com)

**Mataduree qorannoo: Sababoota Proojektiin Gamoo Dhuunfaa Kan Magaala Jimmaa**

**Keessatti Argaman Akka Yeroon Hin Xumuramne Godhan Kan Jedhudha**

Gaaffileen armaan gadii kun proojektii keessanii fi muuxannoo isin ijaarsaa wajjin qabdanuun kan walqabateedha. Dhiifama wajjin bakka duwwaa jiran sanduuqa keessatti mallattoon ka'uun agarsiisi.

## **KUTAA TOKKO: - Odeeffannoo waliigalaa**

Deebiin isin asii gaditti kennitanu dhimma barnootaa qofaaf Kan ooludha.

Kutaa kana keessatti seenaa kee haala ifa ta'een ibsi. Dhiifamaa wajjin deebii kankee lakkoofsa guutuun agarsiisi

1. Bakka ijaarsaa: Hermaataa mandaraa  Giinjoo guduruu  Bachoo booree  Aweetuu mandaraa  Mantiinaa qocii

2. Saala: Dhiira  dhalaa

3. Garee umurii: Waggaa 18 fi isaa gadi  Waggaa 19-28  Waggaa 29-38  Waggaa 39-48  Waggaa 49 fi isa ol

4. Sadarkaa Barnootaa: no normal education  Barumsa sadarkaa tokkoffaa  Barnoota sadarkaa lammaffaa Kan xumure Secondary  Waraqaa raga kan qabu  Dippiloomaa (barnoota oogummaa fi teeknikii kan qabu)  Digirii kan qabu  Maastarsii fi isaa ol

5. Yeroo ammamiif hojjette proojektii ijaarsaa keessa? Waggaa tokkoo gadi  Waggaa 1-2  Waggaa 2-3  Waggaa 3-4  Waggaa 4-5  Waggaa 6 ol

6. Deebii kennitoota: Abbaa gamoo  Kontraaktara  Bakka bu'aa abbaa gamoo  Gorsaa  To'annaa kan gaggeessu qaama mootummaa irraa

## **KUTAA LAMA: Sababoota proojektiin akka yeroon hin xumuramne godhan.**

Sababoonni gurguddoon Kan akka proojektiin gamoo dhuunfaa yeroo taa'eef keessatti hin xumuramne godhan akka armaan gaditti caqafamaniiru. Isinis erga kallattii keessaniin dubbiftanii madaaltanii booda dhiifama guddaa wajjiniin sadarkaa sababoota kanaa caqasaa. 1=Baay'eetti walii hin galu, 2=Walii hin galu, 3=Hin murtoofne, 4=Walii nan gala, 5=Baay'eetti walii nan gala

## **Dhiifama wajjin sadarkaa ati sababota turtii proojektii armaan gaditti dhiyaataniif walii galtu agarsiisi.**

Lak	Meeshaa ijaarsaa wajjin wal-qabate	1	2	3	4	5
1	Hanqinni dhiyeessa meshaa ijaarsaa yeroodhaan xumuramuu proojektii gamoo dhuunfaa irratti rakkoo ni fida.	1	2	3	4	5

2	Qulqullina dhabuun meeshaa ijaarsaa akka projectiin gamoo dhuunfaa yeroon hin xumuramne godha.	1	2	3	4	5
3	Haalli bittaaan meeshaa ijaarsaa itti raawwwatu dadhabaa ta'uun isaa yeroon xumuramuu proojectii gamoo dhuunfaa irratti dhiibbaa qaba.	1	2	3	4	5
44 4	Yeroon dhiyaachuu dhabuun meeshaa ijaarsaa yeroon xumuramuu proojectii gamoo dhuunfaa irratti dhiibbaa qaba.	1	2	3	4	5

<b>Lak</b>	<b>Meeshaa itti gargaaramnuun wal qabatee</b>	1	2	3	4	5
<b>1</b>	Ga'aa ta'uu dhabuun meeshaa itti gargaaramnu yeroodhaan xumuramuu ijaarsa proojectii gamoo dhuunfaa irratti rakkoo ni uuma.	1	2	3	4	5
<b>2</b>	Irra deddeebiin caccabuun meeshaa itti gargaaramnu yeroodhaan xumuramuu ijaarsa proojectii gamoo dhuunfaa irratti rakkoo ni uuma.	1	2	3	4	5
<b>3</b>	Hanqinni qaamolee meeshaa itti fayyadamnu turtii yeroo proojectiin gamoo dhuunfaa itti xumuramu kan dheeressu ta'a.	1	2	3	4	5
<b>4</b>	Meeshaa ittiin gargaaramnu kan sirrii hin taane fayyadamuun ijaarsa proojectii gamoo dhuunfaaf oolu akka yeroon hin xumuramne godha.	1	2	3	4	5
<b>5</b>	Meeshaa itti gargaaramnu kan qindaayee fi gurmaaye ta'uu dhabamuun isaa akka proojectiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa..	1	2	3	4	5



<b>6</b>	Rakkoon haala itti fayyadama meeshaalee tajaajila proojektii gamoo dhuunfaan wal qabate jiru akka proojektichi yeroon hin xumuramne godha.	1	2	3	4	5
<b>7</b>	Meeshaalee jabanaa kan proojektiin gamoo dhuunfaa ijaaruuf itti gargaaramnu ga'aa ta'uu dhabuunsaa proojektoonni kun akka yeroo isaa eeggate hin xumuramne ni godha.	1	2	3	4	5

<b>Lak</b>	<b>Qarshiidhaan walqabatee</b>	1	2	3	4	5
<b>1</b>	Fundiin ga'aa ta'e qabamuu dhabamuun isaa akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>2</b>	Hanqinni qarshii kontraaktara quunnamuun isaa akka gamoon dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>3</b>	Dhalli kaffaltii liqii qarshii proojektii gamoo dhuunfaaf kenname olaanaa ta'uun isaa akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>4</b>	Hanqinni qarshii abbaa gamoo hojjechiifatu quunnamuun isaa proojektii gamoo dhuunfaa akka yeroo taa'eef keessatti hin xumuramne ni taasisa.	1	2	3	4	5
<b>5</b>	Maamilli sababa quubsaa hin taaneen gufachuun isaa akka proojektiin gamoo dhuunfaa yeroo taa'eef keessatti hin xumuramne ni taasisa.	1	2	3	4	5
<b>6</b>	Dhiyeessitootaaf/kontraaktra xixiqqaa jara kontraaktra waliigalaa jelatti hojjetan/ qarshii yeroon kaffaluufii dhabuun akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni	1	2	3	4	5

	taasisa.					
<b>7</b>	Kaffaltii ji'a ji'aan kaffaluu dhabuun proojektiin gamoo dhuunfaa akka yeroon hin xumuramne ni taasisa.	1	2	3	4	5

<b>Lak</b>	<b>Kontraaktaraan Walqabatee</b>	1	2	3	4	5
<b>1</b>	Akkaataa bulchiinsi bakka proojektiin walqabate dadhabaa ta'uun isaa akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>2</b>	To'annoon dadhabaa ta'uun isaa akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>3</b>	Karoorri proojetii fi yeroo dalgaleen tokkon tokkon proojektichaa itti raawwatu sirrii ta'uu dhabuun isaa akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>4</b>	Muuxannon kontraaktaraa ga'aa ta'uu dhabuun isaa proojektiin gamoo dhuunfaa akka yeroon hin xumuramneef sababa ni ta'a.	1	2	3	4	5
<b>5</b>	Akkaataa ijaarsa sirrii hin taane hordofuun proojektiin gamoo dhuunfaa akka yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>6</b>	Tilmaamni yeroo proojektiin gamoo dhuunfaa itti hojjetamee xumuramu yoo sirrii hin taane yeroon proojektichaa akka darbu ni taasisa.	1	2	3	4	5
<b>7</b>	Miseensi garee proojektii dorgomaa ta'uu dhabuunsaa akka proojektiin gamoodhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>8</b>	Kontraaktarri muraan proojekicha keesatti hirmaatan amansiisa ta'uu dhabuun jaraa akka	1	2	3	4	5

	proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.					
<b>9</b>	Teeknooloojii ture fayyadamuun akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5

<b>Lak</b>	<b>Maamilaan Wal-qabatee</b>	1	2	3	4	5
<b>1</b>	Murtiin maamilaa dadhabaa ta'uum isaa akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>2</b>	Maamilli muuxannoo dhabuun isaa akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>3</b>	Fedhiin maamilaa jijjiiramuun isaa akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>4</b>	Maamilli hojii ijaarsaa gidduu seenuun isaa akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>5</b>	Maamilli bakka bu'aa cimaa dhabuun isaa akka proojektiin gamoo dhunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>6</b>	Maamilli dandeettii dubbachuu fi qindeessuu dabuun isaa proojektiin gamoo dhuunfaa akka yeroon hin xumuramne ni taasisa.	1	2	3	4	5
<b>7</b>	Bu'a qabeessumman proojektii maamilaan gaggeeffame sirrii ta'uu dhabuun isaa akka proojektiin gamoo dhuunfaa yeroon hin xumuramne ni taasisa.	1	2	3	4	5

<b>Lak</b>	<b>Qaama alaa wajjin walqabate</b>	1	2	3	4	5
<b>1</b>	Gatiin qarshii gadi bu'uun isaa ykn dhaabbataa ta'uu dhabuun isaa akka proojeetiin gamoo dhuunfaa yeroon hin xumoramne ni taasisa.	1	2	3	4	5
<b>2</b>	Haalli qilleensaa gaarii ta'uu dhabuun isaa akka proojeetiin gamoo dhuunfaa yeroon hin xumoramne ni taasisa.	1	2	3	4	5
<b>3</b>	Rakkoon ollaa wajjin jiru akka proojeetiin gamoo dhuunfaa yeroon hin xumoramne ni taasisa.	1	2	3	4	5
<b>4</b>	Daballi gatii meeshaa akka proojeetiin gamoo dhuunfaa yeroon hin xuuramne ni taasisa.	1	2	3	4	5
<b>5</b>	Gad aantummaa hojjettoonni hojii irratti qabanu akka projektiin gamoo dhuunfaa yeroon hin xumoramne ni taasisa.	1	2	3	4	5
<b>6</b>	Qajeelfamni mootummaan baasu akka proojeetiin gamoo dhuunfaa yeroon hin xumoramne ni taasisa.	1	2	3	4	5
<b>7</b>	Qaama mootummatiin yerodhaan eeyyyama ijaarsa argachuu dhabuun akka proojeetiin gamoo dhuunfaa yeroon hin xumoramne ni taasisa.	1	2	3	4	5
<b>8</b>	Jeequmsi walwaliini ykn siyaasa akka proojeetiin gamoo dhuunfaa yeroon hin xumoramne ni taasisa.	1	2	3	4	5
<b>9</b>	Gochi waaqaa akka proojeetiin gamoo dhuunfaa yeroon hin xumoramne ni taasisa.	1	2	3	4	5

<b>Lak</b>	<b>Yeroon Xumuramuu Proojeeti</b>	1	2	3	4	5
<b>1</b>	Yeroon xumuramuun proojeetii gamoo dhuunfaa kan galma ga'u; yoo wantootni	1	2	3	4	5

	meshaa ijaarsaa wajjin wal qabatan garii ta'aniidha.					
<b>2</b>	Yeroon xumuramuun proojektii gamoo dhuunfaa kan galma ga'u; yoo wantootni meshaa itti gargaaramnuun wajjin wal qabatan garii ta'aniidha.	1	2	3	4	5
<b>3</b>	Yeroon xumuramuun proojektii gamoo dhuunfaa kan galma ga'u; yoo wantootni faayinaasii/qarshii/ wajjin wal qabatan garii ta'aniidha.	1	2	3	4	5
<b>4</b>	Yeroon xumuramuun proojektii gamoo dhuunfaa kan galma ga'u; yoo wantootni kontraaktaraa wajjin wal qabatan garii ta'aniidha.	1	2	3	4	5
<b>5</b>	Yeroon xumuramuun proojektii gamoo dhuunfaa kan galma ga'u; yoo wantootni maamilaa wajjin wal qabatan garii ta'aniidha.	1	2	3	4	5
<b>6</b>	Yeroon xumuramuun proojektii gamoo dhuunfaa kan galma ga'u; yoo wantootni qaama alaa wajjin wal qabatan garii ta'aniidha.	1	2	3	4	5

2.1) Yooyaada addaa Kan akka proojektiin yeroon hin xumurane godhou qabaatte caqasi yookaan ibsi.

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