



**ASSESMENT ON DELAY HANDLING PRACTICE IN PUBLIC BIULDING
PROJECTS OF SNNPRS**

MSc. THESIS

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**ASSESSMENT ON DELAY HANDLING PRACTICE IN PUBLIC BUILDING
PROJECTS OF SNNPRS**

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HAWASSA UNIVERSITY

CO-ADVISOR'S APPROVAL SHEET

This is to certify that the thesis entitled “**Assessment on delay handling practice in public building project of SNNPRS**” submitted in partial fulfillment of the requirements for the degree of Masters of Science with specialization in construction technology and management the Graduate Program of the School of Civil Engineering and has been carried out by **Rahel Negusse**, under my supervision. Therefore, I recommend that the student has fulfilled the requirements and hence, hereby can submit the thesis to the school.

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DECLARATION

I hereby declare that this M.Sc. thesis work is my original work and has not been presented for a degree in any other university, and all sources of material used for this thesis have been duly acknowledged.

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ABBREVIATIONS

BC	Building Contractor
ECC	Ethiopian Civil Code
EOT	Extension of Time
FIDIC	Federation Internationale des Ingenieurs Conseils
GC	General Contractor
LD	Liquidated Damage
MoWUD	Ministry Of Works and Urban Development
PPA	Public Procurement Agency
SCC	special condition of contract
SNNPRS	South Nation Nationalities Peoples Regional State
SPSS	Scientific Package for Social Science

ABSTRACT

Construction delay is a common situation in most construction project. A construction project is considered as successful when it accomplished and hand over to the owner within time, costs, specifications and quality required and to the satisfaction of stakeholders. When the projects are delayed, it will invite to additional time and cost. The main objective of this research is to assess delay handling practice in public building project in south nation nationalities and regional state of Ethiopia. This study is vital in adding knowledge and understanding about the current practice of enforcing liquidated damage on public building project of SNNPR. To achieve the study objectives, a critical review of relevant literature was done combined with questionnaire. Case studies also carried out to show the gap between the existing delay handling practice and the practice recommended in literatures. The research design was quantitative, where the data was collected from clients, consultants and contractors. The data obtained were analyzed using the Statistical Program for Social Scientists (SPSS). The findings of this research indicate that, most contractors notify delay after project completion date is over, detail for time claim request by contractors is not submitted on time, no limit for clients to grant time extension to the contractor and public owners did not enforce the liquidated damage clauses, 51.7% of contractors and 66.7% of consultant and 100% of client responded that liquidated damage is not enforceable in accordance with the contract agreement. Inability of clients to study the contract documents very well and ignorance of liquidated damage provision by sympathetic clients are the main reasons for non-enforcement of liquidated damage. All contracting parties must be accountable for their responsibility and also be ethical for their work in order to handle delay issues without interference of friendship and corruption.

Key Words: Delay handling, Conditions of Contract, Extension of time, Liquidated damage

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The increasing demand for public construction indicates the significance of the industry to the country's social and economic development Alex (2016). The construction industry is one of the industries that cannot be free from problem or challenges. One of the challenges faced by the industry is project delay. The phenomenon of delays is being faced by the construction industry globally and such delays are considered to be most recurring issues in the construction sector (Tumi, 2009).

Delay may be defined as an event which results in or causes an extension of time to complete a whole or some part of a project Sambasivan (2007). Fugar (2010) define delay as an overrun in time which has been specified for completion of work in the contract agreement or overrun in time which has been granted as an extension. Delay may also be defined as the time during which some part of the construction project has been extended or not performed due to an unanticipated circumstance (Tumi, 2009).

A construction project is commonly regarded as successful when it is completed on schedule and within the agreed budget, with the highest quality and softest manner but most Construction projects experience delays in their completion due to various reasons in Ethiopia. Since construction project delay is the common issue in the industry and has adverse effect on the project it requires proper handling. Handling of delay include, the way in which extension of time is granted for the delayed project and also the degree of enforcing liquidated damage clauses which is written under the contract agreement. After delay is happened it must be handled according to the condition of contract.

Failure to complete the construction works according to its prescribed schedule became the reason for the existence of extension of time clause in the contract. Extension of time is the additional time granted to the contractor to relieve it from liability for liquidated damages under the contract (Tesfaye, 2016).

As cited by Tesfaye, (2016), James (2005) found that An EOT provision is inserted in a construction contract for the benefit of both the employer and the contractor, its insertion is primarily for the advantage of the employer. If there was no EOT provision, once the employer had caused delay to completion of the works, it would no longer be able to reply on the liquidated damages provision in the contract. In such circumstances, the contractor's obligation would be to complete within a reasonable time in all of the circumstances.

Poor Delays handling practice will lead the project to delay from its completion date. Delay problems are caused due to the disputes, cost overrun, time overrun negotiation total desertion, Litigation, lawsuit, abandonment etc. Tusharr (2016). Because of these issues project members concur for the cases for the extra capital and additional time connected with construction delay. The consequences of delay are different for different project participants which also depend on the type of project. The general consequences are cost overrun, time overrun etc. For the owner/client delay is the loss of money, loss of time, loss of other facilities etc. For the contractor, delay means the loss of wealth for more expenditure on equipment's, other materials and for hiring the skilled labor.

Once a project is delayed, it has a negative impact on the concerned parties and it must be handled properly to manage it as much as possible to prevent the effects on the overall project. There must be mechanisms for handling of delay in construction. If the delay is not identified and the corrective project management decision is not taken in time a project may incur extra cost and extension of project time, which gives rise to dissatisfaction to all the parties involved and nowadays it's becoming a major obstruction for their development for developing countries like Ethiopia. (Werku, 2016)

1.2 Statement of the problem

Delay in construction projects has been a major issue in the construction industry. The government spends huge amount of money in the construction sector in an attempt to carry out economic development. Majority of this fund is set aside for the construction of roads, railways, hospitals, schools, residential and nonresidential buildings and airports. If these projects are delayed, it will not only slow down economic growth in the country but it will

also increase government expenditures. The result will be wastage of country's resources that could have been used to for other purposes. Delay has also led to a lot of disputes amongst stakeholders in the construction industry. One of significant factor which contributes to this problem is lack of proper project delay handling practice.

A lot of researches have done about the fundamental cause of delay in construction and sufficient literatures are written. But so far adequate researches are not done about the delay handling practice related with application of delay clauses in the condition of contract i.e. notification of delay ,response of client for extension of time request ,submission of extension of time claim and enforcement of liquidated damage. This paper seeks to address the practice of delay handling practice and identify whether the practice confront with accept contractual procedure or not.

1.3 objective of the study

1.3.1 General objective

The main aim of the study is to assess the delay handling practice in public building project of southern nation nationalities and peoples' region of Ethiopia.

1.3.2 Specific Objective

The Specific objective of the research is:-

1. To assess delay handling practice of public building projects in SNNPR.
2. To compare and contrast the current delay handling Practice with contractual procedures
3. To investigate the impact of delay handling practice on the overall projects.

1.4 Significance of the study

The findings from this paper will helps for construction project stakeholders, client, contractors and consultants. The effective understanding of delay handling procedures will be vital to prevent contractors and clients from entering in to dispute and it helps contractor

to escape from loss by liquidated damage. It also helps them to know the effect of delay handling practice and on the overall project.

This thesis will also help for those who read the paper by making them aware of the right and contractually accepted project delay handling approaches to minimize the effect of delay. This study will also add knowledge and understanding about the current practice of enforcing liquidated damage on public building project of SNNPR.

Thus, this study is considered significant for the following reasons.

- This study will be important to building professionals and the public because it will create awareness on how inadequacies in delay handling can adversely affect project.
- This study will also help contractors, clients, consultants and all parties involved in construction projects about ways of improving their current practice of delay handling.

1.5 Research question

The key questions which going to be answered through this research will be the following: -

- I. What is the current delay handling practice in public building project of SNNPR?
- II. What is contractually accepted project delay handling procedures?
- III. What are the gaps between the actual delay handling practice and contractually accepted procedures?
- IV. What is the impact of delay handling practice on the performance of the overall project?

1.6 Scope of the study

Owing to the broad and complex nature of the construction industry, it is important to identify the scope for the study. So the study will focus on public Building projects. Public buildings are any type of building that is accessible to the public and is funded from public sources. This thesis will only cover public building projects in selected towns of SNNPR specifically in Hawassa, Arbaminch and Wolayita sodo, due to the accessibility of the researcher, making the distribution and retrieval of questionnaire easier. The size of the

targeted organization would be large class one construction companies and consulting firms which are currently working on public building projects in the selected cities ,because those construction firms relatively have good experience about the topic. These paper focus on non-compensable delay.

1.7 Organization of the study

This thesis is divided into five chapters that organize, illustrate, and describe the steps taken to meet the defined research objectives. This thesis was organized as follows: The research paper encompasses five parts in which part one contains the introduction which tries to give information concerning the study area and some background information on it.

Part one;-Statement of the problem discussed specific details on the major problems of the study. The need for the study stating about the significance of the study, whereas objective of the study forwards the general and specific goals of the study. Research questions are made and scope of the study is stated on part one.

Part Two;- deal With literature review in which concepts on related topics is raised and discussed, in addition to this a detailed information concerning the research topic were given well in this section of the study.

Part three; - deals about research design and methodology

Part Four;- Which is all about presentation, analysis and interpretation of data that will be devoted on presenting the required sufficient amount of data and then analysis of this data has been made properly and finally based up on the presentation and analysis of those data interpretations were given at last. This chapter also include case study result.

Part five; - Which is the final part of the research report which emphasis on giving conclusions and finally pointing possible recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.2 Definition

2.1.1 Public project

The term public project is an ambiguous one, but in very broad terms, it refers to a project that is financed by a government and is typically owned, and may be operated by the government. This can include major infrastructure works such as roads, bridges, dams, railways, tunnels, and so on, or public facilities such as hospitals, school, prisons, libraries, leisure centers, and so on.

As public projects are generally funded by tax revenue, they are typically subject to a greater level of scrutiny, and greater transparency is required in the bidding and contract award procedures. Public project often publish their requirement and request bids openly, with received bids considered in open and transparent way. The government can also stipulate certain criteria that a supplier must fulfill in order to be awarded a public contract, such as; minimum wage levels, reporting procedures, and so on (Design building, 2019).

2.1.2 Construction Delay

According to Merriam dictionary delay means retard, slow, slacken, detain mean to cause to be late or behind in movement or progress. Delay implies a holding back, usually by interference, from completion or arrival.

Construction delay is a situation when the actual progress of a construction project is slower than the planned schedule or late completion of the projects. Delay is acknowledged as the most common, costly, complex and risky problem encountered in construction projects (Cheung, 2001). Construction delay is defined as a time overrun either beyond the contract date or beyond the date that the parties have agreed upon for the delivery of the project (Hamzah, 2011). Time is the essence of a construction contract. When a contractor fails to

complete the project within the contract period, the delay becomes the reality of the project.

Delay also defined as the principal dimension measured by schedules (McGraw-Hill, 1998). According to this writer delay to the private owner mean, a loss of revenues through the resulting lack of production facilities and rentable space, as well as through continuing dependence on present facilities. To the public owner, it can mean that a building or facility is not available for use at the planned time. Finally, to the contractor, delay means higher overhead costs that result from the longer construction period, higher prices for materials resulting from inflation, and escalation costs that are due to labor cost increases.

According Musa (2012) Delays of a construction project can be defined as the late completion of works as compared to the planned schedule or contract schedule. Projects can be delayed due to number of reasons that may be due to the client, the contractor, acts of God, or a third party. They may occur early or later in the project development, alone, or with other delays. Delays can be minimized only when their cause are identified. Delay is a situation when the contractor and/or the project owner contribute jointly or separately in making the project, implementation fails to finish on time by exceeded the planned period of implementation or exceeded the stipulated period of contract (Aibinu, 2002).

Sambasivan (2007) defined delay as a situation in which project due to some causes related to the contractor, consultant and client or other causes has not been finished in agreed period. Delay in general could be defined as “to act slower than desired/planned” (Khaled, 2014).

Delays in construction projects are known to be among the commonest problem facing the industry as it causes a number of negative impact on both the project itself and the parties involved. A successful construction project is accomplished when the project is completed and hand over to the owner within time, costs, specifications and quality required and to the satisfaction of stakeholders (Sullivan, 1986). When a project is delayed, it will cause the resources employed to be exceeded as what has been planned. This extra use of resources will lead to disputes and claims arise as extra costs will be incurred to complete

the project by the participating parties. As (Werku, 2016) identified that delay in construction project is considered one of the most common problems causing a multitude negative effect on the project and its participating parties. Delays are insidious often resulting in time overrun, cost overrun, disputes, litigation, and complete abandonment of projects.

2.2 Types of Delays

Several studies by numerous researchers like Michael(2017) grouped the delay in the following broad categories depending on how they operate contractually:

- non-excusable delays;
- Excusable delay;
- non-compensable excusable delays;
- compensable excusable delays; and
- Concurrent delays.

In addition, Trauner et.al. (2009) came out with an opinion based on study conducted that construction delays could be classified as: non-excusable or excusable, non-concurrent or concurrent, non-critical or critical, and non-compensable or compensable.

2.2.1 Non-excusable Delays

Non-excusable delays are delays, that occurred due to negligence to fulfill contractual obligation and are within the control of the contracting parties which the Contractor either causes or assumes the risk for. These delays might be the results of underestimates of productivity, inadequate scheduling or mismanagement, construction mistakes, weather, equipment breakdowns, staffing problems, or mere bad luck. Such delays are inherently the Contractor's responsibility and no relief is allowed. These delays are within the control of the Contractor or are foreseeable (Ahmed, 2014).

As the study of lepage (2017) indicates, delayed mobilization, delayed submission of submittals, overall late performance and execution, late performance of subcontractors, late

performance by suppliers, faulty workmanship by the contractor or subcontractor and a project specific labor strike caused by either the contractor's unwillingness to negotiate or by unfair job practices are some examples of non-excusable delay.

2.2.2 Excusable Delays

Excusable delays are delays that occurred due to causes which are beyond the control of project doer. If delays are caused by project owners, the contractor or the consultant or the supplier is directly justified for the effects on delay of the project. Force Majeure will also be one of the causes for justifiable delay (Wubishet, 2006).

Delays resulting from the following events would be considered excusable:

- a. General labor strikes
- b. Fires
- c. Floods
- d. Acts of God
- e. Owner-directed changes
- f. Errors and omissions in the plans and specifications
- g. Differing site conditions or concealed conditions
- h. Unusually severe weather
- i. Intervention by outside agencies
- j. Lack of action by government bodies, such as building inspection

They are broken down further into compensable or non-compensable Excusable delays

2.2.3 Non-compensable Excusable Delays

When a delay is caused by factors that are not foreseeable, beyond the Contractor's reasonable control and not attributable to the Contractor's fault or negligence, it may be "excusable". This term has the implied meaning that neither party is at fault under the terms of the contract and has agreed to share the risk and consequences when excusable events occur. The Contractor will not receive compensation for the cost of delay, but he will be

entitled for an additional time to complete his work and is relieved from any contractually imposed liquidated damages for the period of delay.

2.2.4 Compensable Excusable Delays

These are delays for which the contractor is entitled not only to an extension of time but also to adjustment for any increase in cost caused by the delay. Excusable, compensable delays are classified as “Owner Responsible Delays”. An excusable, compensable delay, in addition to granting time extension, warrant monetary compensation to the contractor for extra costs incurred – commonly referred to as delay damages. Generally, compensable delays constitute a delaying event that is within the control of, is the fault of, or is due to the negligence of the owner. A compensable delay occurs due to :-

- Owner’s failure to furnish the site to the contractor by an agreed date
- Faulty design
- Incomplete drawings and specifications
- Changes in scope
- Suspension of work
- Differing site conditions
- Late delivery of owner-supplied materials

The study of Ahmed (2014) found that, In addition to the compensable delays that result from contract changes by Change Notice, there are compensable delays that can arise in other ways. Such compensable delays are excusable delays, suspensions, or interruptions to all or part of the work caused by an act or failure to act by the Owner resulting from Owner’s breach of an obligation, stated or implied, in the contract. If the delay is compensable, then the Contractor is entitled not only to an extension of time but also to an adjustment for any increase in costs caused by the delay. Owner-issued contracts specifically address some potential compensable delays and provide equitable adjustments.

2.2.5 Concurrent Delays

Concurrent delays occur when both Owner and the Contractor are responsible for the delay. Generally, if the delays are inextricably intertwined, neither the Contractor can be held responsible for the delay (forced to accelerate, or be liable for liquidated damages) nor can he recover the delay damages from the Owner (Ahmed, 2014).

There are many moving parts between an owner and a contractor (and subs or suppliers) on a construction project and, at times, a concurrent delay can occur. This type of schedule delay happens when two or more parties are at fault. The complexity here lies in determining to what extent each party contributed to the delay. There are some technical methods of analyzing schedules that can assist in this determination. The overlapping of delays makes it difficult to analyze and factors like the duration of the delay, time of occurrence of the delay and float ownership have to be carefully considered in the technical analysis (Lepage, 2017).

The effect of concurrent delays for the project can be assessed using that part of the work which causes longest delay and its consideration are made as such. For instance, if a project owner agreed to supply material and irrespective of its delay, if the project faced adverse weather condition; the project cannot be executed. Therefore, both delays could not be counted as serial delay but concurrent and the one that causes longer delay is considered for time delay computations (Abebe, 2007).

2.2.6 Critical delays

Delays that result in extended project completion times are known as critical delays (Callahan et al, 1992). In the case of excusable critical delays, the contractor will generally be entitled to a time extension.

2.2.7 Non-critical delays

Non-critical delays are delays incurred off the critical path which do not delay ultimate project performance Leon (1987). If the delay in this case is excusable, the

contractor does not have the right to receive a time extension, because this type of delay does not have an effect on the overall completion of the project. However, noncritical delays may affect the contractor's cost performance; in this case, the contractor may have the right to receive additional performance costs.

2.3 Effect of delays

The research work carried out by Tushar (2016) states that there are numerous elements bringing about deferment few of them are: some are inside the contractual worker's obligation and some are inside proprietor's risk. It is difficult to explain them due to the overlapping nature of the events of which the project participants are responsible. It is found that delay problems are caused due to the disputes, cost overrun, time overrun negotiation total desertion, Litigation, lawsuit, abandonment etc.

A research conducted in Sudan by Mohammed (2015) also studied the effects of the delay in the construction industry of Sudan. He discovered six possible common effects which arising in most countries as a result of delay. These effects were; cost overrun, time overrun, disputes, arbitration and litigation and total abandonment of project. Because of these issues project members concurs for the cases for the extra capital and additional time connected with construction delay.

The consequences of delay are different for different project participants which also depend on the type of project. The general consequences are cost overrun, time overrun etc. For the owner/client delay is the loss of money, loss of time, loss of other facilities etc. For the contractor, delay means the loss of wealth for more expenditure on equipment's, other materials and for hiring the skilled labor (Tushar, 2016).

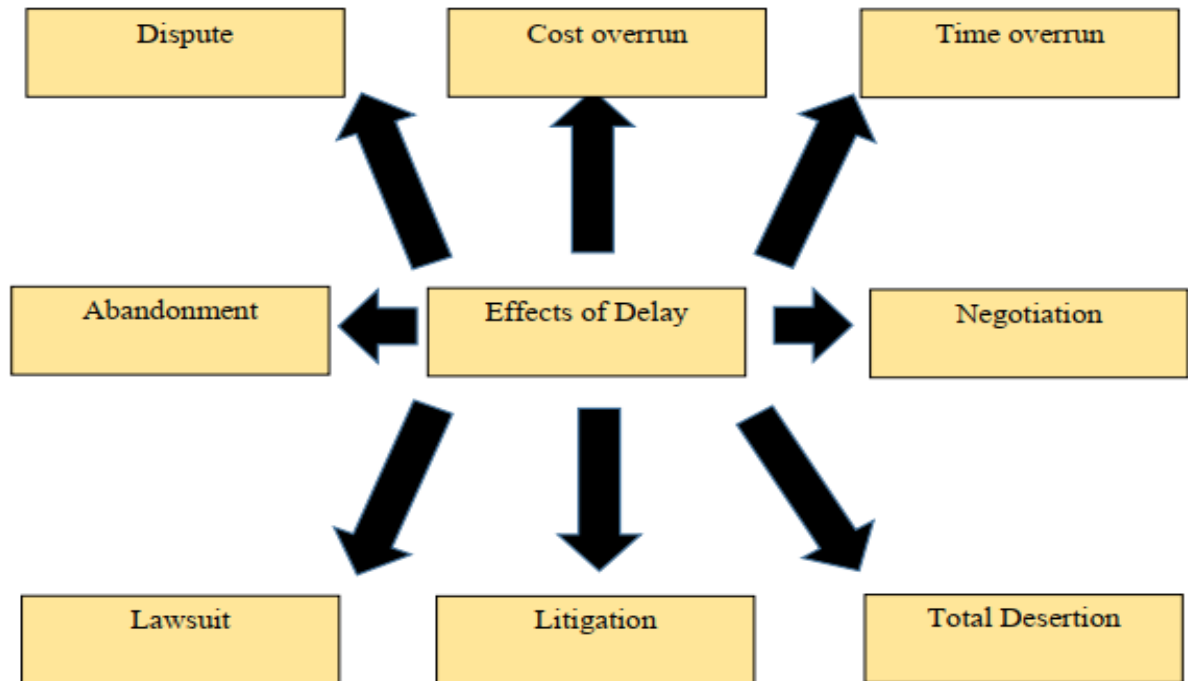


Figure 2.1: Effects of delay (Tushar, 2016)

The study by Kikwes (2012) also revealed that effect of delay and disruption in construction project create the following consequences; Time overrun , Cost overrun, negative social impact , idling resources , disputes , Arbitration ,Delaying by the client to return the loans , Poor quality of work due to hurry , Delaying in getting profit by clients , Bankruptcy , Litigation , Create stress on contractors , Total abandonment ,Acceleration losses.

2.4 Delay Notice

A contractor's notice of delays is a form of communication. It is an advice to the owner or owner's representative (contract administrator) or agent that something has happened or is likely to happen that may affect the progress of work and would entitle the contractor to an extension of time and/or compensation Ndekugri (2008). The contractor's notice would enable the owner consider the financial consequences Fung (2006). It would allow the owner to consider cancellation of any directed changes causing the delay or consider alternative instruction so as to mitigate the consequential impact on the project. Thus a

contractor's notice is an alert to the owner about the problem at hand. It gives the owner opportunity to investigate and mitigate the effects of the delays event under the particular circumstances. The purpose of a contractor's notice is to inform the owner or the contract administrator that a problem exists, which could entitle the Contractor to an extension of time claims Frimpong (2003) and/or compensation (if it is provided for by the contract). A contractor's notice ensures that the owner is aware of the problem. It gives the owner opportunity to take appropriate technical steps to remedy the problem Farrow (2007). Where a delay event is unavoidable, a contractor's timely notification of the event would, potentially, enable the contract administrator to conduct early and contemporaneous assessment of the contractor's claims and its basis rather than an after-the-fact assessment. In some standard forms of construction contract, a contractor's notice of delay and claims is, expressly, a condition precedent to the contractor's claims for extension of time and compensation (if it is allowed in the contract) so that a contractor's failure to comply with the written notice requirement within the time limit stipulated in the contract would bar the contractor from entitlements to extension of time and/or compensation .

As cited by Kingsley (2013) the employer must give the contractor a notice of non-completion and that Liquidated Damages may be levied; the employer may then deduct Liquidated Damages from payments otherwise due to the contractor, or recover the amount from the contractor as a debt. If an Extension of Time (EOT) is subsequently granted in relation to that period of delay, the employer must pay to the contractor the amount of Liquidated Damages deducted, up to the new completion date (Eggleston, 2009). The need to give contractually required notices to the Owner is stressed. Virtually all contract provisions that deal with excusable and compensable delays contain a requirement for prompt written notice of the delay to the Owner. In addition, the next schedule update submitted to the Owner should clearly show any delays the company has experienced and the time extensions the company is entitled to (and has requested from the owner), whether the Owner has approved it or not. The schedule update should be accompanied by a narrative that describes the delay and its impact in the completion of the project to the extent known at that time.

If the delay is non-excusable, notice to the Owner is generally not required. However, even a non-excusable delay may have to be shown on the contractually required schedule together with the actions the company will take to make up for the effects of the delay, such as acceleration of the work. The contractor is always required, under the contract clauses, to notify the employer of its intention to make a claim for time and/or money within certain period defined in the contract. Failure by the contractor to abide with the contract requirements for notification makes the entitlement for the claim declined (Ahmed, 2014).

2.4.1 Delay Notice as per PPA

The Contractor shall, within 15 days of becoming aware that delay may occur, notify the Engineer of his intention to make a request for extension of the Intended Completion Date to which he may consider himself entitled, and shall, unless otherwise agreed between the Contractor and the Engineer, within 21 days from the notification deliver to the Engineer full and detailed particulars of the request, in order that such request may be investigated at the time (PPA, 2011).

This condition of contract under Clause 73.4 indicates, if the Contractor has failed to give early notification of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new intended completion date.

2.4.2 Delay Notice as per civil code

(1) The debtor shall forthwith inform the other party of the reason which prevents him from performing his obligations.

(2) He shall be liable as though non-performance were attributable to him for any damage caused to the other party which could have been avoided, had notice been given.(Civil Code,1960)

2.5 Extension of time

If the project is delayed by an event that impacts on the completion date, but is not the fault of the contractor, then this may constitute a 'relevant event' for which the contractor may be granted an extension of time (i.e. the completion date in the contract is adjusted). This can have the effect of relieving the contractor from a claim of liquidated damages. (Design building, 2019)

However, mechanisms allowing extensions of time are not simply for the contractor's benefit. If there was no such mechanism and a delay occurred which was not the contractor's fault, then the contractor could no longer be required to complete the works by the completion date and would only have to complete the works in a 'reasonable' time. With no enforceable completion date, the client would lose any ability to claim liquidated damages for other delays that are the contractor's fault.

When delay happen, contractors would be penalized and is eligible to pay the liquidated damages amount as agreed in the contract. In order to avoid this loss, contractors often seek for opportunities to claim for extension of time. Therefore, effectively managing EOT will be vital to help contractor to escape from liquidated damage (Lew yoke-lian, 2012).

2.5.1 Extension of time Clause:

2.5.1.1 Extension of time as per PPA

Clause 73.1 of PPA (2011) indicates that the Contractor may request an extension of the Intended Completion Date if he is or will be delayed in completing the contract by any of the following causes:

- (a) Exceptional weather conditions in the Federal Democratic Republic of Ethiopia;
- (b) Artificial obstructions or physical conditions which could not reasonably have been foreseen by an experienced Contractor;

- (c) Compensation Event occurs or a change order for modification is issued which makes it impossible for completion to be achieved by the Intended Completion Date;
- (d) Administrative orders affecting the date of completion other than those arising from the Contractor's default;
- (e) Failure of the Public Body to fulfill his obligations under the Contract;
- (f) Any suspension of the works which is not due to the Contractor's default;
- (g) Force majeure;
- (h) Any other causes referred to in these GCC which are not due to the Contractor's default.

Compensation Events for allowing time extension as per PPA (2011) condition of contract clause 74.1, the following shall be Compensation Events allowing for time extension:

- a) The Public Body does not give access to a part of the Site by the Site Possession Date stated in the Contractor's approved work program;
- b) The Public Body modifies the Schedule of other Contractors in a way that affects the work of the Contractor under the Contract;
- c) The Engineer orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time;
- d) The Engineer instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects;
- e) The Engineer unreasonably does not approve a subcontract to be let;
- f) The Engineer gives an instruction for dealing with an unforeseen condition, caused by the Public Body, or additional work required for safety or other reasons.
- g) Other Contractors, public authorities, utilities, or the Public Body do not work within the dates and other constraints stated in the Contract, and they cause delay;

h) The advance payment is delayed;

I) The Engineer unreasonably delays issuing Interim Payment Certificates; Other Compensation Events described in the SCC or determined by the Public Body and force majeure.

74.2 If a Compensation Event would prevent the work being completed before the Intended Completion Date, the Intended Completion Date shall be extended. The Engineer shall decide whether and by how much the Intended Completion Date shall be extended.

74.3 The Contractor shall not be entitled to compensation to the extent that the Public Body's interests are adversely affected by the Contractor not having given early warning.

2.5.1.2 Extension of time as per FIDIC

According FIDIC (2006) under sub clause 20.1 , If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, as and not later as 28 days after the Contractor became aware, or should have become aware, of the event or circumstance. If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Employer shall be discharged from all liability in connection with the claim.

As stated on FIDIC (2006) The Contractor shall be entitled subject to an extension of the Time for Completion if and to the extent that completion for the purposes of Taking-Over of the Works and Sections is or will be delayed by any of the following causes:

(a) A Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 13.3 (Variation Procedure) or other substantial change in the quantity of an item of work included in the Contract,

- (b) A cause of delay giving an entitlement to extension of time under a Sub-Clause of these Conditions,
- (c) Exceptionally adverse climatic conditions,
- (d) Unforeseeable shortages in the availability of personnel or Goods caused by epidemic or governmental actions, or
- (e) Any delay, impediment or prevention caused by or attributable to the Employer the Employer's Personnel, or the Employer's other contractors.

FIDIC standard condition of contract also stipulates provisions related to extension of time as discussed under clause 42 and 44.

Clauses 42.2: The Contractor is entitled to extension of time and compensated for the incurred costs if the client fails to give possession of site.

Clause 44.1: The Contractor will be entitled to only an extension of time in such events: extra or additional work, adverse climatic conditions, impediment or prevention by the client, or other special circumstances without his fault.

Clause 44.2: The contractor even will not be entitled to the extension of time unless he notifies the detailed particulars within 28 days

Clause 44.3: When an event has a continuing effect, the Contractor shall submit interim particulars not exceeding 28 days interval and final particulars within 28 days of the end of the effects to get extension of time

Clause 46: Provided that the project progress is too slow to ensure completion by the prescribed time or extended time, the contractor shall take acceleration steps without any compensation.

2.5.1.3 Extension of time as per MoWUD

Ministry of Works and Urban Development (MoWUD) standard condition of contract is incorporated in the general condition of contract. The delay clauses are:-

Clause 44: The contractor is entitled to an extension of completion time if he notifies the client within 28 days when there is extra or additional work or exceptional adverse climatic conditions, or other special circumstances without his fault.

2.6. Liquidated damage

For many projects, owners shift at least part of the risk of late completion onto contractors. The most common form of risk shifting is the inclusion of a liquidated damages provision in the construction agreement. Liquidated damages are specified daily charges deducted from moneys otherwise payable to the contractor for each day the contractor fails to meet a milestone and/or contract completion date. Another way of looking at liquidated damages is that it is the price the contractor must pay per day for working beyond the required completion dates (Tawil et. al, 2008).

Liquidated damages in construction contracts are the mechanism through which one party can claim monetary compensation for loss or damage that occurs as a result of the other party's failure to deliver the works, goods or services under the contract on time. The distinction between liquidated damages and general damages is that the former is a fixed rate or amount in the contract between the parties, whereas the latter is an amount determined by a court when it hears the matter (design building, 2019).

Construction contracts normally make provision for a penalty clause (or sometimes liquidated damages/delay damages), which requires the contractor to reimburse the employer a certain predetermined amount for the period the works remain incomplete after the lapse of the scheduled, and sometimes extended, time of completion. Damages for late completion of construction contracts are normally liquidated at the time of concluding the contract. This is because late completion of construction contracts is the most common breach normally suffered by employers in construction contracts Eggleston (2009). The main advantage of the penalty clause, compared to a claim for damages in construction contracts, is that the employer need not have suffered, or even alleged, any prejudice in order to be entitled to the penalties.

Liquidated Damages are inserted into Conditions of Contracts in the form of a clause as a way of protecting the Clients from the damages to be suffered as a result of project delays. This clause basically serves to protect the interest of the Client in question in terms of losses to be incurred if a contractor fails to deliver on time as agreed upon in the construction contract (Kingsley , 2013).

Design building (2019) also state that Contracts generally include a clause making provision for the contractor to pay liquidated damages to the client in the event that the contract is breached. In building contracts, liquidated damages usually relate to the contractor failing to achieve practical completion (i.e. completing the works so they can handover the site to the client) by the completion date set out in the contract. Liquidated damages are not penalties, they are pre-determined damages set at the time that a contract is entered into, based on a calculation of the actual loss the client is likely to incur if the contractor fails to meet the completion date. They might include; rent on temporary accommodation, removal costs, extra running costs, and so on. They are generally set as a fixed daily or weekly sum, although there may be more complicated formulae where the works are phased, where may be partial possession and so on. It is important that the method of calculation is precisely and formally documented.

2.6.1 Liquidated Damages Clause:

2.6.1.1 Liquidated damage As per PPA

PPA condition of contract under clause 27 states about liquidated damage that, If the contractor fails to carry out any or all of works within the period specified in the contract , the employer may without prejudice to all its other remedies under the contract ,deduct from the contract price ,as liquidated damages the following:

- A) A penalty of 0.1% or 1/1000 of the value undelivered service for each day of delay until actual delivery or performance,
- B) The cumulative penalty to be paid by the contractor shall not exceed 10% of the contract price

In addition, if the delay in performing the contract affects its activity, the employer may terminate the contract by giving advance notice to the contractor without any obligation to wait until the penalty reaches 10% of the value of the contract (PPA, 2011).

2.6.1.2 Liquidated damage As per MOWUD

According to Clause 47 of MOWUD, (1994) If the Contractor shall fail to achieve completion of the Works within the time prescribed by Clause 43 hereof, then the Contractor shall pay to the Employer 1/1000 of the contract price per day as liquidated damages for such default and not as a penalty for every day or part of a day which shall elapse between the time prescribed by Clause 43 hereof and the date of certified completion of the works. Depending on the nature of the works, Liquidated damage higher than the minimum limit provided herein above may be fixed in the contract. The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any monies in his hands, due or which may become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from any other of his obligations and liabilities under the Contract.

2.6.1.2 Liquidated damage As per FIDIC

FIDIC standard condition of contract is used in international contracts when the contractual parties are from different countries. It stipulates provisions related to liquidated damage as discussed hereunder

Clause 46.1: If the project progress is too slow to meet the completion date, the contractor shall take acceleration steps without any compensation

Clause 47.1: The client is entitled to liquidated damages for every day after the project completion date but

Clause 47.2: The liquidated damages for delay shall be effected for only non-completed, noncertified portion of works

2.6.1.3 Liquidated damage As per Civil Code

The Ethiopian Civil Code (ECC) also comprises articles which address the nature, effect, and treatment of construction delays as discussed hereunder.

Article 1771: A contractual party is allowed to require enforcement of the contract or cancellation of the contract and damage caused to him by delay to be made good when the other party does not carry out his obligations under the contract. However,

Article 1791: If the party fails to perform his obligations, he shall be liable to pay damages unless he can show that performance was prevented by force majeure

Article 1792: Force majeure results from an unforeseeable occurrence which absolutely prevents the contractor from performing his obligation

Article 1793: Examples of force majeure include the unforeseeable act of a third party for whom the contractor is not responsible, an official prohibition preventing the performance of the contract, a natural catastrophe such as an earthquake, lightning or flood, international or civil war and the death or a serious accident or unexpected serious illness of the contractor

Article 1794: Force majeure shall not exist in the following situations: strike or lock-out taking place in the undertaking of a party or affecting the branch of business in which he carries out his activities; or an increase or reduction in the price of raw materials necessary for the performance of the contract; or the enactment of new legislation which makes the performance of the contract more onerous.

Article 1794: When contractor delays the carrying out of his task, the client may fix him a reasonable time limit to begin the execution of the task. In case, the contractor, after this time limit, has not begun the task or has interrupted it in bad faith, the client may cancel the contract without waiting for the expiry of the period laid down for the completion of the task. Where appropriate, the client may also claim damages from the contractor.

2.6.2 Enforcement of Liquidated Damage

There is a general perception that public sector clients do not enforce the penalty clause. The extent of delays, if any, in construction contracts implemented by the public sector is also unknown. It is unknown whether the type of works, i.e. civil engineering or building works, affects the enforcement of the penalty clause (Tshikila, 2014).

The Liquidated Damage clause, by its nature, is included in construction contracts in order to dissuade the contractor from completing the works late. The extent of enforcement of this clause in projects implemented by the public sector in South Africa is presently unknown. The reasons for the no enforcement of the penalty clause are also unknown (Tshikila, 2014).

As cited by Kingsley (2013), Tuuliet *al* (2007) found that in Ghana, some “sympathetic clients” generally do not enforce the liquidated damages clause. They often ignored or overlooked liquidated damages when it is due.

As cited by Tshikila (2014) , Adjei-Kumiet *al*. (2006), highlighted the following as factors militating against the application of Liquidated Damages: Introduction of Fluctuation Clause in Contracts, Inability of clients to study the contract documents very well, Sum being a penalty.

Seidu (2001) as cited in Kingsley (2013) also said the enforcement of the liquidated damage clause in construction contracts in Ghana is problematic partly due to lapses in contract administration practices.

2.7 Gap Identification

Conditions of contract state that the contractor shall within 15 days of becoming aware that delay may occur, notify the engineer of his intention to make a request for extension of the intended completion date to which he may consider himself entitled, and shall, unless otherwise agreed between the Contractor and the Engineer, within 21 days from the notification deliver to the Engineer full and detailed particulars of the request, in order that

such request may be investigated at the time PPA (2011). Despite of this, most contractors provide their time claim after the project completion date expired.

All conditions of contracts and literatures stated that within specific days stated in the contract from receipt of the Contractor's detailed particulars of the request, the Engineer shall, by written notice to the Contractor after due consultation with the Public Body and, where appropriate, the Contractor, grant such extension of the Intended Completion Date as may be justified, or inform the Contractor that he is not entitled to an extension. However, what if the consultant or the employer didn't respond on time? Literatures argued that this will take as there is no provision for time extension and the contractor will have a right to complete the work within a reasonable time. But most of the contractors and consultants didn't exercise it in time claims. This concept is supported by civil code of the Empire of Ethiopia (1960) which states:

- (a) Each contracting party shall perform his obligations within the time fixed by the contract.
- (b) Failing a specific provision in the contract, each contracting party shall perform his obligations within a reasonable time (Civil Code Art. 3174).

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. As data and methodology are highly interdependent, the methodology to be used for a particular research problem must always take into consideration the nature of the data that will be collected to resolve the research problem (Kothari, 2004).

This chapter comprises of the method and the design that was used to conduct the research. It was a qualitative research in which the data was collected using questionnaires. The population was made of clients, contractors and consultants. There was collection of both primary and secondary data. The primary data was obtained using questionnaires while the secondary data was gathered from the literature. In addition this chapter also presents the questionnaire design, the different sections of the questionnaires, the scale as well as the pilot study that was conducted to ascertain there liability of the questionnaire.

The research methodology chosen for this study comprised of intensive literature review, questionnaire to building construction stake holders in (Hawassa, Arbaminch and Welayita sodo) and a statistical analysis of the Survey.

- Literature gathering
- Literature review
- Questionnaire preparation
- Questionnaire Survey
- Data collection
- Data analysis

3.2 Research Design

Research design is defined as a framework of methods and techniques chosen by researchers to combine various components of research in reasonably logical manner so that the research problem is efficiently handled Bhat (2019). It is the blueprint for conducting the study that maximizes control over factors that could interfere with the validity of the findings. Designing a study helps the researcher to plan and implement the study in a way that will help the researcher to obtain intended results, thus increasing the chances of obtaining information that could be associated with the real situation (Burns & Grove, 2005).

The research was designed to get opinions from clients, consultants and contractors of construction companies in regard to delay handling practice and the effect of delay handling Practice.

The types of study used in this research were mainly descriptive. It is considered as a suitable and available research method for the purpose of description about delay handling practice in public building construction projects.

3.3 Research Type

The types of study used in this research were mainly descriptive. It was attempted to collect data from the relevant respondents to study the delay handling practice in building construction projects.

Descriptive research is more convenient in gathering opinion of people on a particular issue. This kind of method is concerned with gathering facts and obtaining perfect precise information concerning the current state of phenomena and whenever possible making conclusion for the facts discovered (Orodho, 2012).

It is considered as a suitable and available research method for the purpose of description about delay handling practice in public building construction projects.

3.4 Sampling Technique

The sample size of this research paper was selected from public building construction projects that were under construction in Hawassa, Welayita sodo and Arbaminch. In selecting sample size ongoing construction projects were considered. For the selecting criteria of sample size the researcher gathered information on active public building construction projects that are being undertaken by class one contractors. The information was collected from Hawassa the city administration construction bureau, Wolayita sodo construction bureau, Arbaminch construction bureau, and Arbaminch University. From this technique a purposive sampling method was adopted to select the sample for the study as it involves selecting a sample based on experiences or knowledge of the group to be sampled. Therefore, this study was planned to be conducted on thirty five (35) building construction projects that are being constructed by construction firms of grade one and the sample size may include office buildings, educational buildings, and multi-purpose projects in those cities.

The target respondents to the questionnaires on the various sites in this research include Contractors (project manager), Consultants (resident engineer) and Client currently working on public building project in selected towns (Hawassa, welayita sodo and Arbaminch) of SNNPR. The researcher adopted a purposive sampling method to select respondents from the contractor side; the reason for this was that all professionals on the site did not have adequate knowledge on the topic.

3.5 Study area

This study will be undertaken in south nation nationalities people's regional state more specifically on public building project of Hawassa, welatasodo and Arbaminch cities. Hawassa is a city in Ethiopia on the shores of Lake Hawassa in the Great Rift Valley and it is located around 270 kilometers south from Addis Ababa via Bishoftu, 130 km east of Sodo, and 75 km north of Dilla. The town serves as the capital of the southern Nations, Nationalities, and peoples region, and is a special zone of this region. Arbaminch is a city and separate woreda in southern Ethiopia; It is surrounded by Arba Minch Zuria woreda and

the most resourceful zone in southern region including two largest Lakes in Ethiopia (Chamo and Abaya), more than 40 springs, National Nechsar park and crocodile market. Wolayita is also a Zone in SNNPRs of Ethiopia which is located at 300 kilometers south from Addis Ababa.



Figure 3.1; Map of study area (source, Google map)

3.6 Data collection method

The data for the study was obtained from the primary and secondary sources. The data from the primary sources were collected through questionnaire and case study. A detail literature review was conducted on books, codes of practices, specifications, and relevant websites to compare and analyze the current (existing practice) in public building construction of SNNPR with contractually accepted approach of delay handling Procedures. Project

managers, site engineers, office engineers and resident engineers were the source of information for the primary data. Both close ended and open-ended questions were developed to collect relevant data to the study.

The study employed both qualitative and quantitative data collecting tools. The use of mixed methods approach for this research was intended to drive the benefits of both quantitative and qualitative approaches. The bulk of the data were collected through administering questionnaires survey (closed and open-ended questions) .The quantitative data obtained from the questionnaire survey is organized, coded and categorized using the SPSS software; which facilitates analysis and testing; and the presentation of the statistical outcomes.

3.6.1 Questionnaire design

From the literature reviewed, relevant information that could aid the study objectives were collected and reviewed. A first draft of the questionnaire was developed on the basis of a review of the literature. The questionnaire form consists of three main parts: The First part includes information about the respondent particulars such as position and number of years of experience. The second part of the interview form dealt the delay handling practice and the third part is about effects of delay handling practice. The content of the draft questionnaire was discussed with the Advisor of the thesis. Modifications and new questions were added after discussing with the thesis advisor. Closed questions required the respondents to rate (using Likert Scale) their opinions on issues relating to delay handling in their projects and also from their experience in building projects in SNNPR.

3.7 Ethical Considerations

This study was conducted according to the ethical guidelines of research requirements. The privacy and confidentiality of the respondents of this study was protected by keeping in secrecy the information collected. Deception was avoided by informing construction companies about the purpose of the research and its implications on the respondents.

3.8 Data processing and analysis

The collected raw data was first sorted, edited, coded and then entered into a computer software. Two programs used where the excel sheet and statistical package for Social Science (SPSS). The method analysis combined both quantitative and qualitative types of data. The data collected using closed-ended questions of the questionnaire were analyzed using descriptive statistics. Data was analyzed by determining the mean score, percentages using the statistical package for social sciences (SPSS) software and appropriate graphical representations and tables were obtained to analyze the questions and to present the data more elaborately in accordance with their importance.

The data were summarized, and content analysis was carried out using narrations and interpretations.

3.8.1 Reliability test

Cronbach's alpha (α) coefficient

The data gathered through questionnaires is checked by Cronbach's alpha (α) coefficient for reliability or consistency. Cronbach's alpha is a measure of reliability of the data on a questionnaire and ranges from 0 to 1.0. It indicates the extent to which the respondents rate the same question. For example, if all respondents give same answer to all questions, the alpha for these questions would be 1.0. The minimum level for reliability when using Cronbach's alpha coefficient is 0.7 and any value below this indicates that the variables are inconsistent and unreliable (Fellows & Liu, 2007).

Cronbach's alpha is calculated using the following equation 3.3 (Boermans & Kattenberg, 2011)

$$\alpha = \frac{I}{I-1} \left(1 - \frac{\sum_{l=1}^I \sigma_l^2}{\sigma_X^2} \right) \text{----- [Eq.3.1]}$$

Where I = the number of items in the scale.

σ_i^2 = the variance of item i, and

σ_X^2 = the variance of the observed total test scores

3.8.2 Correlation test

Spearman's Coefficient of Correlation

Spearman's coefficient of correlation (or rank correlation) was analyzed to test for agreements among the three main parties – government sector, private consultant and private contractor. Spearman's coefficient of correlation (or rank correlation) is a method of determining the degree of correlation between two variables where ranks are given to the different values of the variables. The main objective of this coefficient is to determine the extent to which the two sets of ranking are similar or not. Thus, government sector with private consultant; government sector with private contractor and consultant with contractor.

Spearman's coefficient of correlation (or rank correlation) is analyzed using the give formula (Kothari, 2004)

(Kothari, 2004).

$$\text{Spearman's coefficient of correlation (or } r_s) = 1 - \left[\frac{6 \sum d_i^2}{n(n^2 - 1)} \right] \text{----- [Eq.3.1]}$$

Where d_i = difference between ranks of i^{th} pair of the two variables;

n = number of pairs of observations.

3.9 Pilot study

A pilot study involves testing a questionnaire with a small group of people who represents target respondents. This will help pin point mistakes in the questionnaire and will also determine if the questions will be understood and easily answered by the respondents. A pilot study for the questionnaire was conducted before collecting the results of the sample. It provides a trial run for the questionnaire, which involves testing the wordings of the questions, identifying ambiguous questions, testing the techniques used to collect data, and measuring the effectiveness of standard invitation to respondents (Naoum, 1998). The piloting process was conducted by five respondents who are currently working in Hawassa, they were selected precisely because of their practice in the construction projects and nearness for the researcher. The five were invited to participate in the piloting process and were asked to review the questionnaire and give their advice. Important comments and some modifications have been done. The main comments could be summarized as follow:

1. The name of the organization and Address removed from the questioner to keep the information of the organization secret.
2. Some factors and sentences should be modified or represented with more details.
3. Some factors and sentences should be modified in order to give more clear meaning and understanding.

3.10 Summary

In this chapter, discussion was made for all the procedures that were followed in the collection and analysis of data. The approach used was mixed research methodology questionnaire and case study. Hence, it has explained how the questionnaires and case study interview were collected and analyzed.

CHAPTER FOUR

4. RESULT AND DISCUSSION

4.1 Introduction

This chapter provides explanations for data collection such as distribution of the questionnaire, collection of responses and subsequent analysis of the data acquired through the responses from professionals who are working for the client, consultants and contractors and involved in public building projects in SNNPRS.

A questionnaire survey has been conducted to gather the required information from professionals who have been involved in public building projects in SNNPRS, Working on behalf of a client, consultant or contractor; towards answering the basic research question.

4.2 Questionnaire Response Rate

The questionnaire was prepared and distributed to three contractual parties i.e. contractors, client and consultants currently working on the public building project sites in person contact by going to all the project sites. In building construction project, the three main parties, the project owner, the consultants, and the contractor involved in the project have specific roles and tasks, which are all vital to the success of a project. Thus, the three main parties were targeted in the research. Seventy four (74) questionnaires were distributed to the parties by considering the position of the respondents in the project.

Client

A total of eight questionnaires were sent out to the client out of which six questionnaires were collected. This represents 75% of the total number of questionnaires sent out to the client.

Consultants

Out of the total 31 questionnaires sent out to the consultants; 26 questionnaires were received and considered valid for analysis. This represents 83.9% of the total number of questionnaires sent out to the consultants.

Contractors

Out of a total of the 35 questionnaires sent out to grade one local contractor, 28 questionnaires, which represents 80% were returned and found to be valid. An overall response rate of 81.1% was achieved. The questionnaire distribution and collection took one month and the response rate is as shown in the Table below.

Table 4.1 Questionnaire response rate

Contractual Parties	Questionnaire distributed	Questionnaire responded	Response Rate
Client	8	6	75.00%
Consultant	30	27	90.00%
Contractor	35	29	82.86%
TOTAL	73	62	84.93%

4.3 Respondents position in the organization

In terms of positions within the projects, 27.4% project manager, 40.3% Resident Engineers, 9.7% site engineer, 9.7% office engineer, 9.7% representatives and 3.2% Site Supervisors participated in responding the questionnaire. The percentage distribution of the various professionals indicates that most of the questionnaires was completed directly by professionals involved in the building construction project.

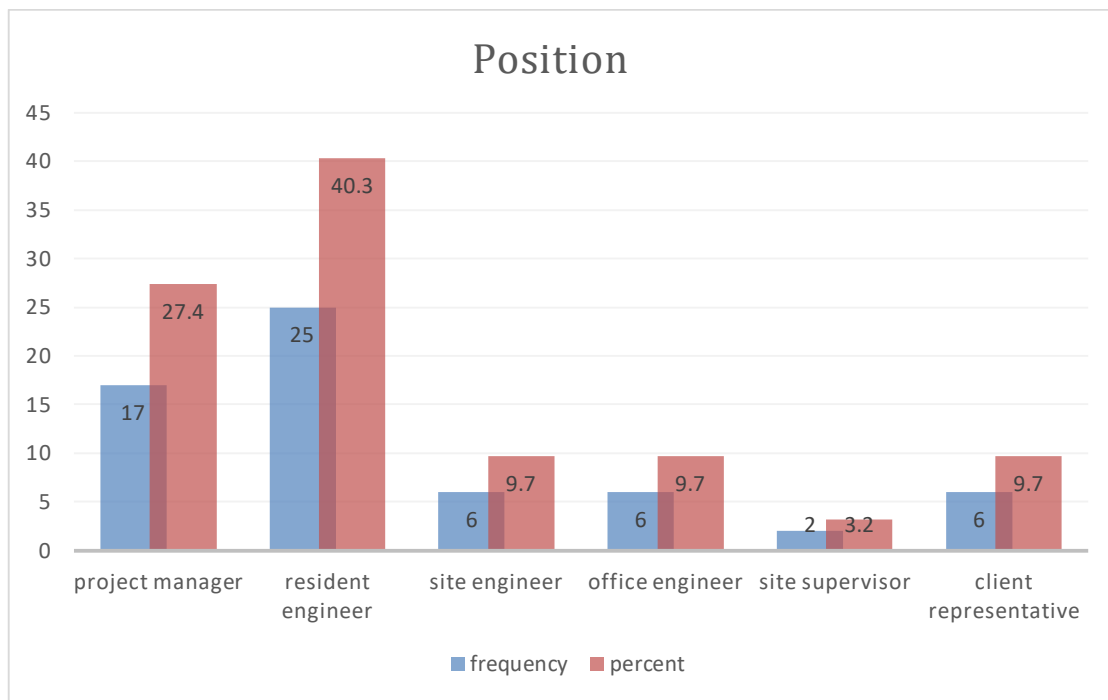


Figure 4.1 position of respondents

Most of the respondents are project managers and resident engineers, which have overall responsibility for the most of the contractual issues of the project and have better knowledge about the research topic.

4.4 Educational level of respondents

The survey result shows that 26 percent of the respondents have MSc. Educational qualification and the rest 74 percent BSc. Degree Educational qualification. Therefore, the survey shows that it was well represented by better qualified professionals and these groups of respondents are expected to have better knowledge on the subject matter.

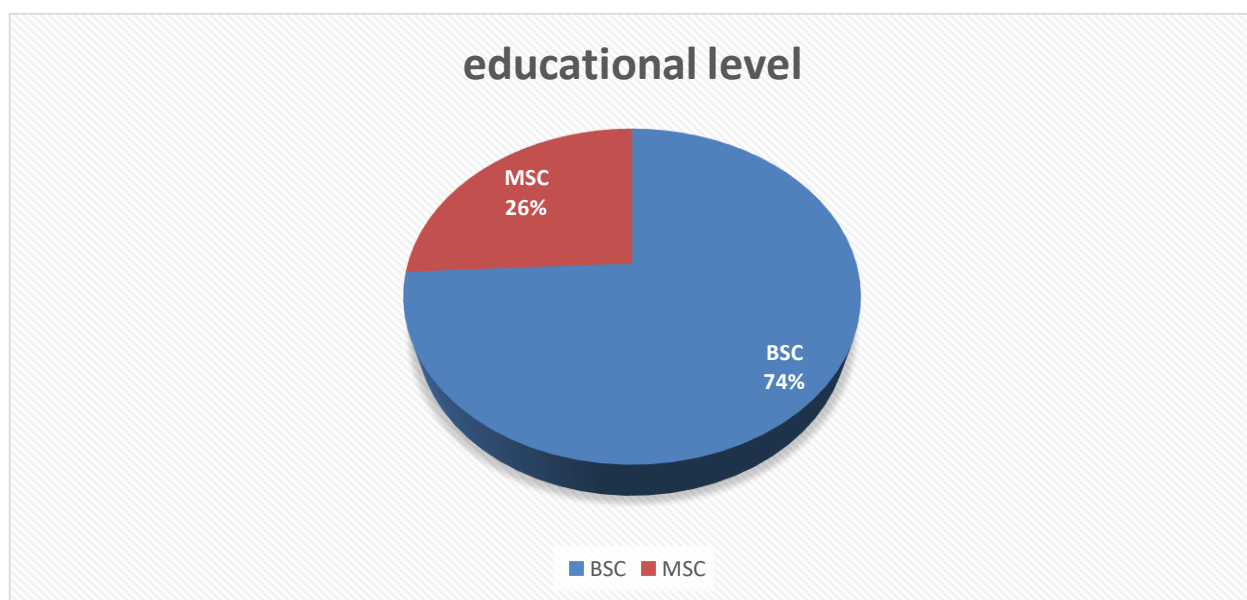


Figure 4.2 Respondent's educational level

4.5 Work experience of respondents

The results below clearly show that out the 62 returned questionnaires, 4 (6.5%) of the respondents had less than 2 year work experience, 21 (33.9%) respondents had 2-5 years of working experience, 22 (35.5%) had 5-10 years of working experience, and finally 15 (24.2%) had above 10 years of working experience. This shows that the results we will obtain will be valid. The overall profile implies that most of the respondents have adequate experience in the construction firms. This indicates that, the respondents could provide the required information for all items included in the questionnaire.

Table 4.2 Experience of respondents

Experience of respondents	Frequency	Percent
<2 years	4	6.5
2-5 years	21	33.9
5-10 years	22	35.5
>10 years	15	24.2

4.6 Delay handling practice

The first objective of this research is to assess delay handling practice in public building project of southern nation nationalities and people regional state of Ethiopia. To achieve this objective the researcher sets three measurements those are: notification of delay, extension of time and liquidated damage.

Under notification of delay, the occasion for notifying delay was assessed. The other measurement is extension of time ,under this the practice of submission of extension of time request ,response of extension of time request ,fairness of delay evaluation ,and limit for extending completion time of the projects were assessed. The third measurement of delay handling practice is liquidated damage, under this respondents were asked about enforcement of liquidated damage in accordance with contract agreement and the reason for non-enforcement of the provision.

4.6.1 Projects faced delay

Construction delays are considered as time lag in completion of activities from its specified time as per condition of contract.

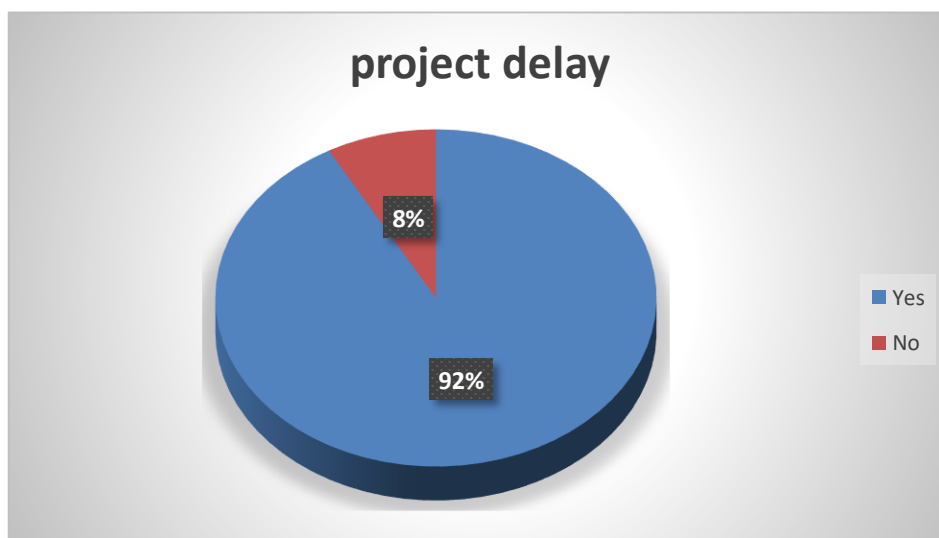


Figure 4.3 Projects faced delay

Among the projects which are selected for this research 92% have faced delay of the original completion date and only 8% of projects are not finish their original contract time. Since majority of respondents experienced delay issues in their building project, they are perfect target population for the survey to get information about delay handling practice.

4.6.2 Type of condition of contract

As the questionnaire survey result indicates 100% of respondents are use public procurement agency (PPA) condition of contract. This result indicates that it is enable the researcher to see the delay handling practice of public building projects in accordance of PPA condition of contract.

Table 4.3 type of condition of contract

Condition of contract	Frequency	Percent
PPA	29	100

4.6.3 Occasion to notify delay

The contractor is always required, under the contract clauses, to notify the employer of its intention to make a claim for time and/or money within certain period defined in the contract. Failure by the contractor to abide with the contract requirements for notification makes the entitlement for the claim declined (Ahmed, 2014). A contractor's notice is an advice to the client that something has happened or is likely to happen that may affect the progress of work and would entitle the contractor to an extension of time.

Contractor response indicates, the occasion to notify delay is when the consequence of delay is predicted and after the completion date is over with equal percent of 34.5%, and remaining 31% of contractors said that delay is notified within 15 days of becoming aware that delay may occur.

Table 4.4: Time to notify delay by contractual parties

		Contractor		Consultant		Client	
		Frequency	%	Frequency	%	Frequency	%
1	When the progress is estimated and consequence is predicted	10	34.5	9	33.3	0	0
2	Within 15 days of becoming aware that delay may occur	9	31.0	6	22.2	0	0
3	After the completion date is over.	10	34.5	12	44.4	6	100
	Total	29	100	27	100	6	100

As indicated in the table above 44% of consultant and all client agreed that occasion to notify delay is after the completion date is over. But 22.2% of consultant agree that, contractors notify delay as per PPA condition of contract. Since PPA condition of contract clearly stated, occasion to notify delay is within 15 days of becoming aware that delay may occur, the delay notification practice is not according to the condition of contract.

4.6.4 Response of consultant for extension of time request

Table 4.5. Response of consultant for extension of time request

	Contractor		Consultant		Client	
	Frequency	%	Frequency	%	Frequency	%
On time	18	62.1	22	81.5	6	66.7
Not on time	11	37.9	5	18.5	2	33.3
Total	29	100.0	27	100	6	100

As the questioner survey result shows 62.1 percent of contractors, 81.5 percent of consultant and all client representatives agreed that the response of consultants for the extension of time request by contractor is on time. As shown in table 4.5, 37.9 percent of contractors and

18.5 percent of consultants indicates consultants does not give timely response for time claim.

Even if most condition of contract clearly state about the exact time to respond completion date extension, it is not applied by most construction firms in Southern nation nationalities and regional states in Ethiopia.

4.6.5 Acceptance of client to time claims after approval

Table 4.6. Acceptance of client to time claims after approval

		Contractor		Consultant		Client	
		Frequency	%	Frequency	%	Frequency	%
	On time	29	100	22	81.5	6	100.0
	Not on time	0	0	5	18.5	0	0
	Total	29	100.0	27	100.0	6	100.0

All contractor and client respondents agree that clients give timely acceptance for the time claim requested by contractors. However about 5(18.5%) of consultant indicates that clients did not give timely acceptance for the time claim requested by contractors.

4.6.6 Fairness of delay analysis technique

From the figure below 48.5% of contractors and 77.8% of consultant's and 66.7% of client's respondent agree the delay analysis technique by consultant is fair. In addition to this 51.7% of contractor, 22.2% of consultant and 33.3% of client said respond that analysis technique is partially fair.

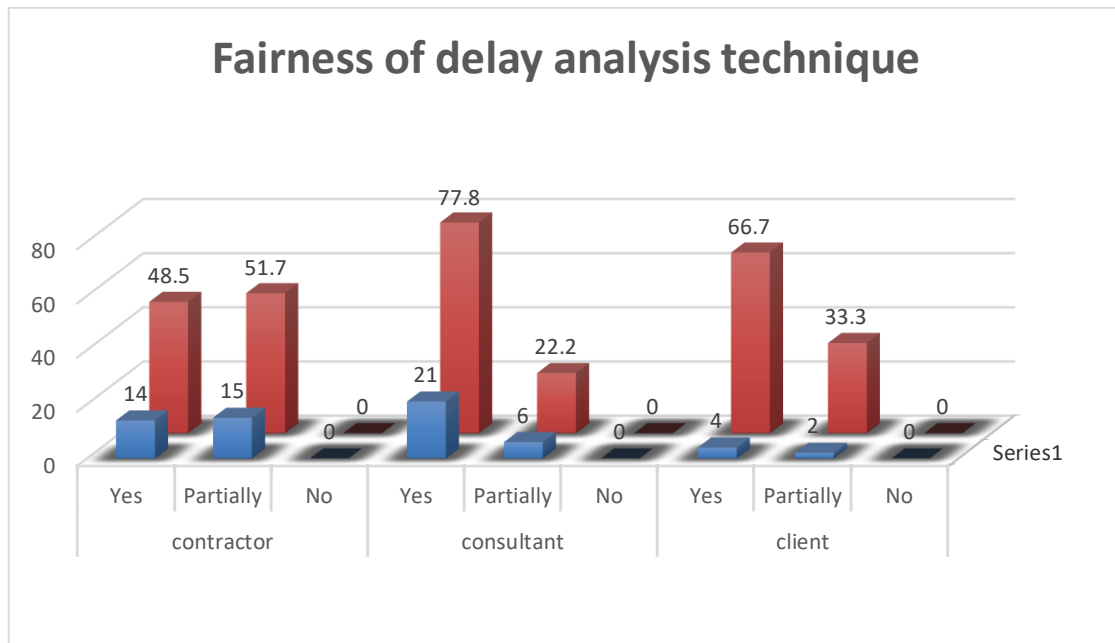


Figure 4.4 Fairness of delay analysis technique

The remaining respondents, 66.7% of client agree that the delay evaluation technique is no fair at all. But the thesis conducted by Tesfaye (2016) 60% of client's respondent agree the time extension request by contractor is not fair and 75 % of consultant's agree the request is partially fair.

4.6.7 Factor affect delay evaluation technique

The respondents, who responded as the delay evaluation technique is partially fair or not fair, were asked to identify the reason behind this problem. Most contractors (46.67 %) agree that the main factor affecting the delay evaluation is Lack of professional, technical and managerial skill to evaluate ,next to these negligence to provide the service as per the specified condition and Corruption are the second factors with equal percentage of 26.67.

According to consultants response Lack of professional, technical and managerial skill and corruption are reasons which affect delay evaluation.

Table 4.7: Factors which affect delay evaluation technique

Factor	Contractor		Consultant		client	
	Frequency	%	Frequency	%	Frequency	%
Lack of professional, technical and managerial skill	7	46.67	3	50	2	33.3
Negligence to provide the service as per the specified condition	4	26.67	-	-	-	-
Corruption	4	26.67	3	50	4	66.7
Total	15	100	6	100	6	100

As the result shown in the above table 66.7% client agree that the main factor which affect delay evaluation is corruption between parties. Lack of technical and managerial skill is the second reason. As the result shows delay evaluation technique is least affected by negligence to provide the service as per specified under condition of contract.

Correlation test

Table 4.8: Spearman's coefficient of correlation

Group of Stakeholders	Spearman's coefficient (r_s)
Client with consultant	0.75
Client with contractor	0.25
Consultant with contractor	0.67

Spearman's correlation coefficient of 0.75 and 0.67 were obtained for client and consultant, and consultant and contractor, respectively. These values are greater than critical correlation coefficient. This reveals that there is similarity in perception between client and consultant as well as consultant and contractor regarding factor affect delay evaluation technique. On

the other hand, Spearman's correlation coefficient of 0.25 were obtained for client and contractors, which indicates the response of client and contractor is slightly correlated.

4.6.8 Extent to extend project completion time by employer

Extent for extension of time granted by employer was classified into five categories, up to 100%, 200%, 300%, and 400% of the original contract duration and no limit for extending completion date by the employer. Based on those alternatives respondents were asked to select one of these categories to indicate the extent for extension of time granted by employer. From five alternatives only two of them are selected by respondents.

Table 4.9: - Extent employer extend project completion time

Extent	Contractor		consultant		client	
	Frequency	%	Frequency	%	Frequency	%
Up to 100 % of the original contract time	8	27.6	-	-	-	-
Haven't known limit	14	72.4	27	100	6	100
Total	29	100	27	100	6	100

The above table all consultants and client agree that there is no limit for clients to grant time extension to the contractor. The response of contractors indicates that 72.4% agreed with the above idea and 27.6% of contractor the extent for extension of time granted by employer is up to 100% of the original contract time.

4.6.9 Submission of extension of time claim

Table 4.10. Late submission of extension of time claim

	Contractor		Consultant		client	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Create a Problem	24	82.8	27	100.0	6	100.0
Do not a problem	5	17.2	0	0.0	0	0.0
Total	29	100.0	27	100.0	6	100.0

Respondents were asked to identify whether late submission of time claim by contractors create a problem or not. The result shows that 24 (82.8%) of contractors, 27(100%) of consultant and also 6 (100%) of owner agree that the time claim request by contractors is not submitted on time.

4.6.10 Reasons for delays in submitting the details of claims for extension of time

This section discuss on submission of time claim for the achievement of delay handling practice objective. The respondents were requested to identify the reasons for delays in submissions of details of EOT claims, and these were ranked based on the mean value. The respondents provided the rankings for each of the 9 possible reasons presented in the questionnaire using a five-point Likert scale, where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree. Mean score was calculated for each effect of failure and ranks were provided. Reasons for delays in submissions were ranked in Table 4.11

According to consultant's and client's response Poor paperwork control by the contractor were rated as the main reason for delay in submitting the details of extension of time claim. Nevertheless, these reasons were at the fourth in Malaysia's construction industry. This might be caused by different management practiced or different procedure of submitting claims for extension of time due to the different types of contract used.

Table 4.11. Reasons for delays in submitting the details of claims for extension of time

	Reasons	contractor		consultant		Client	
		Mea n	Ran k	mea n	Ran k	Mea n	Ran k
1	Site staff inexperienced in contract procedures	3.62	1	3.07	4	3.83	3
2	Engineer requests excessive details	3.28	4	2.81	6	2	5
3	Poor paperwork control by the contractor	3.31	3	4.15	1	5	1
4	Actual delay could not be determined until end of construction	3.28	4	2.19	9	4	2
5	The effects are not known/could not foresee that an event would cause a delay until the delay occurred	3.34	2	2.59	8	4	2
6	Focus on progress of work and not on claim	3.17	6	2.63	7	2	5
7	contractor's staff too busy on other tasks	3.24	5	3.59	2	3	4
8	lack of staff to deal with EOT claims	2.76	8	3.26	3	4	2
9	Contractor does not want to cause friction or offend the employer	2.90	7	2.93	5	2.00	5

Similar to previous researcher who did in Hong Kong Yogeswaran (2003) most contractors said that Site staff inexperienced in contract procedures were rated as the main reason for delay in submitting the details of ex. Next to this ‘‘the effects are not known or could not foresee that an event would cause a delay until the delay occurred’’ and ‘‘Poor paperwork control by the contractor’’ are ranked as the second and third reason respectively.

Reliability test

Reliability test was done, for the respondents answer for the reason for delay in submitting the detail of time claim, by calculating cronbach alpha coefficient as follows

Table 4. 12; Cronbach Alpha coefficient test Result on the Reasons for delays in submitting the details of claims for extension of time

	Cronbach Alpha Coefficient
Respondent	0.59

The result indicates that all items in this Section are reliable. There is internal consistency between the items. This is because the Cronbach Alpha coefficient for all the components is Strong between 0.50 and 0.80. Therefore it is concluded that the result and questions were reliable (Cohen et al., 2007).

Correlation test

Table 4.13: Spearman's coefficient of correlation Test Result on the Reasons for delays in submitting the details of claims for extension of time

Group of Stakeholders	Spearman's coefficient (r_s)
client with consultant	0.31
client with contractor	0.54
Consultant with contractor	0.03

Spearman's correlation coefficient of 0.31 and 0.54 were obtained for client and consultant, and client and contractor, respectively. These values are greater than critical correlation coefficient. This reveals that there is similarity in perception between project owner and consultants as well as project owner and contractors regarding ranking the Reasons for delays in submitting the details of claims for extension of time. On the other hand,

Spearman's correlation coefficient of 0.03 were obtained for consultants and contractors, which is less than the critical values. Thus there is difference in perception of consultants and contractors on ranking the Reasons for delays in submitting the details of claims for extension of time.

4.6.11 Relevance of LD provisions in construction contracts

This part of the questionnaire sought respondents' perception of the relevance of liquidated damage provisions in construction contracts. Relevance was assessed by asking respondents directly whether they perceived Liquidated damage provision in construction contract is relevant or not.

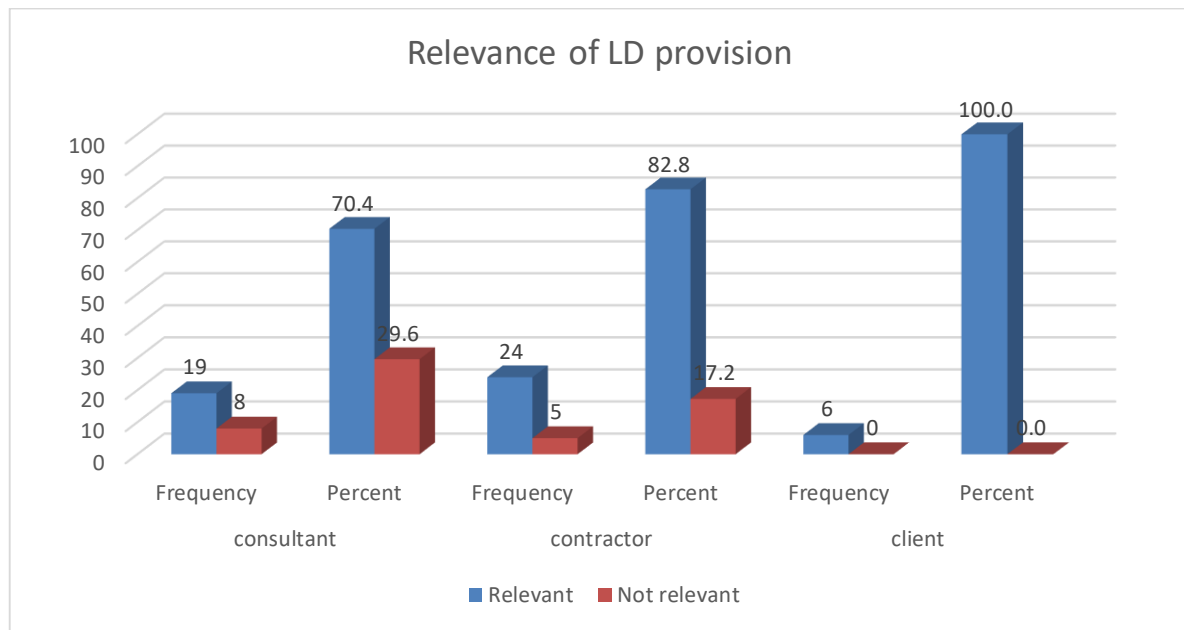


Figure 4.5 Relevance of LD provision in construction contract

The result indicates 70.4% of consultant, 82.8% of contractor and 100% of client agreed that liquidated damage provision in construction contract is relevant. But 29.6% of consultant and 17.2 % of contractors said the provision is not relevant in the contract. The respondents are in agreement that the enforcement of the penalty clause the rate of production in a construction site.

4.6.12 Enforcement of liquidated damage

When delay in completion occurs and it is certified that the delay is due to non-excusable reasons on the part of the contractor, the payment of liquidated damage becomes due.

Respondents from contractor, consultant and client organizations were asked if they have had to enforce liquidated damage, if they did not enforce on any occasion, they were due, reasons were sought.

Table 4.14 Enforceability of liquidated damage

	Contractor		Consultant		Client	
	Frequency	%	Frequency	%	Frequency	%
Enforceable	1	3.4	2	7.4	0	0
Sometimes enforceable	3	10.4	5	18.5	0	0
Not enforceable	25	86.2	18	66.6	6	100
Total	29	100	27	100	6	100

In the light of this finding public sector contracts are generally completed late, and as shown in table 4.12, a high proportion of respondents indicated that public owners are not enforce the liquidated damage clauses, 51.7% of contractors and 66.7% of consultant and 100% of client response that liquidated damage is not enforceable in accordance with the contract agreement. 37.9% of contractors and 18.5% of consultants agreed that liquidated damage clauses are sometimes enforceable.

4.6.13 Reasons for non-enforcement of Liquidated Damage

According to contractor's response, inability of clients to study the contract documents very well is the first reason for non-enforcement of liquidated damage clauses. Second reason as per the contractor is that the clause may not acceptable according to law or in front of court.

Table 4.15 Reasons for non-enforcement of liquidated damage

	Reasons	contractor		consultant		client	
		mean	Rank	mean	Rank	Mean	Rank
1	Liquidated damage are generally overlooked or ignored in by sympathetic clients	3.10	3	3.22	1	4.00	1
2	Introduction of Fluctuation Clause in Contracts	2.86	4	1.93	4	4.00	1
3	Inability of clients to study the contract documents very well	3.52	1	2.22	3	3.00	2
4	The clause is not acceptable according to law	3.38	2	2.56	2	1.00	3

As shown in the above table most clients agreed that liquidated damage are generally overlooked or ignored in by sympathetic clients and Fluctuation of clause in Contracts is the main reason for non-enforcement of liquidated damage clauses under the contract.

In addition most respondents said that the reason for non-enforcement of liquated damage is that the relationship between client and contractor i.e. they are tied together by their friendship, so they would not enforce the liquidated damage provision under contract. The other reason that respondents indicate is capability and financial status of local contractors.

4.7 Delay handling practice compared with accepted condition of contract

As shown in table 4.3 all respondents are use PPA condition of condition of contract 2011 version. Therefore, to evaluate the delay handling practice of public building projects compared to condition of contract, PPA (2011) is considered.

When the projects are delayed, they will invite to the additional cost and if this delayed project is not handled properly with a manner of contract agreement it may lead to extra cost and time other than the cost and time due to delay. Therefore, managing project delay, notification, evaluation of time extension, also applying delay clauses according to the contract, is very important.

Contractor's response

As the result indicates only 31% of contractors notify delay as per the condition of contract. Most respondents agreed that occasion for notification delay is after completion date is over ,but PPA condition of contract clearly state that ,the Contractor shall, within 15 days of becoming aware that delay may occur, notify the Engineer of his intention to make a request for extension of the intended completion date to which he may consider himself entitled.

Table 4.16 Response of contractor compared with the contract

N o	Measurement	According to PPA contract	Practice
1	Occasion to notify delay	Within 15 days of becoming aware that delay may occur	31%
2	Response of consultant for EOT claim	within 21 days from receipt of detailed particulars of the request	62.1%
3	Enforcement of liquidated damage	1/1000 of the value undelivered service for each day of delay until actual delivery or performance	3.4%

Since the contractor's notice is an alert to the client about the situation which going to cause delay of the problem, it gives an opportunity to investigate the effect of delay event under particular circumstance.

In regards to response of consultant for the time claim, 62.1% of contractors agreed that the practice is in accordance with the contract. The practice of enforcing liquidated damage with respect to the contract is very low, which is 3.4%.

Consultant's response

Table 4.17 Response of consultant compared with the contract

N o	Measurement	According to PPA contract	Practice
1	Occasion to notify delay	Within 15 days of becoming aware that delay may occur	22.2%
2	Response of consultant for EOT claim	within 21 days from receipt of detailed particulars of the request	81.5%
3	Enforcement of liquidated damage	1/1000 of the value undelivered service for each day of delay until actual delivery or performance	7.4%

As the consultant response shows, 81.5% of consultant give timely response for extension of time claim according to the contract agreement i.e. within 21 days from receipt of detailed particulars of the request from the contractor.

Client's Response

According to client, time delay notification practice is not coincide with the contract procedure. Contractors only consider notifying the situation of delay, they are not interested about the time or the occasion. The client also not contribute for timely notification of delay. Because when is notified

without consideration of the exact occasion stated under the condition of contract, they accept the contractor.

Giving response for time extension claim is more than half percent within the time specified on the agreement.

Table 4.18 Response of client compared with the contract

N o	Measurement	According to PPA contract	Practice
1	Occasion to notify delay	Within 15 days of becoming aware that delay may occur	0%
2	Response of consultant for EOT claim	within 21 days from receipt of detailed particulars of the request	66.7%
3	Enforcement of liquidated damage	1/1000 of the value undelivered service for each day of delay until actual delivery or performance	0%

When we see practice of enforcing liquidated damage provision under the contract, clients agreed that 100% of clients not enforce liquidated damage for delayed projects. However according to PPA (2011), if the contractor fails to carry out any or all of works within the period specified in the contract, the employer may without prejudice to all its other remedies under the contract, 0.1% or 1/1000 of the value undelivered service for each day of delay until actual delivery or performance, and cumulative penalty to be paid by the contractor shall not exceed 10% of the contract price. There is a general practice that public sector clients do not enforce the liquidated damage clause.

4.8 Effect of delay handling practice

If construction project delay is not properly handled or managed it will negatively affect the project, parties involved on the project and also the overall construction industry. Handling of delay include, the way in which extension of time is granted for the delayed project, starting from notification of delay, and also the degree of enforcing liquidated damage clauses which is written under the contract agreement.

Thus a contractor's notice gives the owner opportunity to investigate and mitigate the effects of the delays event under the particular circumstances. The purpose of a contractor's notice is to inform the owner or the contract administrator that a problem exists, which could entitle the Contractor to an extension of time claims (Frimpong, 2003). A contractor's notice also ensures that the owner is aware of the problem. Failure by the contractor to stand with the contract requirements for notification makes the entitlement for the claim declined.

The result show that Because of non-enforcement of liquidated damage provision, the contractor is not fill responsible for time overrun (duration of the project) and they thought that they would not punished even if the project is delayed and these appreciate project delay. In addition Non-enforcement of liquidated damage more affect client loss the project service and may lose money because the client exposed to further consulting cost during the delayed period. Additionally that enforcement of liquidated damage has a significant on the overall project. It discourage timely project completion and also decrease project performance with respect to time.

Poor Delays handling practice will lead the project to delay, which have had a number of effects to construction projects. Respondents were requested to rank these effects by using 5-point scale or lickert scale. The results are as indicated in Table below.

Table 4.19 the effect of delay handling practice

N o	Effects	Response				
		strongly agree	agree	slightly agree	Disagree	strongly disagree
1	time overrun	46(74.2%)	16(25.8%)	0	0	0
2	cost overrun	39(62.9%)	16(25.8%)	7(11.3%)	0	0
3	Disputes	12(19.4%)	27(43.5%)	16(25.8%)	7(11.3%)	0
4	Total abandonment	7(11.3%)	9(14.5%)	26(41.9%)	14(22.6%)	6(9.7%)
5	Low quality of work	9(14.5%)	8(12.9%)	25(40.3%)	12(19.4%)	8(12.9%)

Results indicate five highly ranked effects as time overrun, cost overrun, Disputes, Total abandonment and low quality of work. These results are more less the same as those obtained by Aibinu (2002) in Nigerian construction industry and Sambasivan (2008) in Malaysian construction industry. On the other hand, medium ranked effects include: arbitration, delaying by the client to return the loans and poor quality of work due to hurry

When construction projects are delayed, more time is needed for completion of projects. Most of the respondents agree that time overrun and cost overrun are the most and adverse effect of delay handling practice.

4.9 CASE STUDY RESULT

Introduction

In this sub-section discussion was made on delay handling practice of public building project sample projects as case studies. The aim of this sub-section is to explore the practice in related to time extension grant, enforcement of liquidated damage, support the findings with actual site information gathered from specific public projects. For case study projects, data from each project were collected from site interview of professionals in the project and data from contract documents and reports. The ultimate purpose of this discussion was to validate the findings from the literature review and questionnaire and to explore practical cases. For confidentiality, the name of the clients, consultants and contractors are kept secret. This is mainly due to some data source requested the author not to disclose the company name and data that can easily identify the project. The findings of this case study are only representing the specific projects. These government building projects are selected based on availability of data, project progress and willingness of the parties. The researcher tried to get information from other projects but only three projects are willing to give data.

Case study 1

The first case is conducted two delayed projects of from the same owner, contractor and consultant is taken as one case study.

The first project is educational building project site. The project site is located in Hawassa city and lays on an area of 25000 m². Grade-1 general contractor and class-1 consultant participated in the construction of the building project.

The total contract price of this project was five hundred twenty one million one hundred sixty thousand four hundred fifty six birr and twenty two cents (521,160,456.22). The total schedule given in contract was 730 calendar days. After approved time extension of 1211 calendar days, the final schedule becomes 1941 calendar days. However, the current status (till the end of August, 2019) of the project was still 79.72% with time of overrun 31 days with no time extension. The detail site information about the project is presented under Annex III.

The second project selected for the first case study is also educational building project site.. The project site is located in Hawassa city and lays on an area of 20,000 m². Grade-1 general contractor and class-1 consultant participated in the construction of the building project.

The total contract price of this project was two hundred eighty one million three hundred sixty seven thousand seven hundred thirty one birr and sixty cents (281,367,731.6). The total schedule given in contract was 730 calendar days. After approved time extension of 991 calendar days, the final schedule becomes 1721 calendar days.

Table 4:20 Project description

Description	Project 1	Project 2
Date of contract signature	12th February 2014	14th June 2013
Site hand over	15 calendar days	15 calendar days
Commencement date	14 th March 2014	13 th July 2013
Original contract time	730 calendar days	730 calendar days
Completion date	13 th March 2016	13 th July 2015
Time extension granted	1211 days	991 days
Revised contract period	1941calendar days	1721calendar days
Main contract price	521,160,456.22	281,367,731.60
Time elapsed	103.19%	104.82%
Status of project	79.72%	80.94%

Extension of time

The first project was totally extended 1211 calendar days, which is 165.89% of the original contract amount, and hence the revised completion date of the project became July 7, 2019. The completion time for this building project is extended six times. The first, second, third and fourth Extension of time guaranteed 140, 228, 75, and 402 calendar days respectively. The client approve these extension of time with justification.

The total extension of time granted for the second project was 1391 calendar days, which is 190.5% of the original contract amount.

Table 4.21 Approved extension of time for case 1

Project	No of extension of time	Granted date	Remark
project 1	EOT-1	140	with justification
	EOT-2	228	with justification
	EOT-3	75	with justification
	EOT-4	420	with justification
	EOT-5	186	Without justification
	EOT-6	180	Without justification
project 2	EOT-1	260	With Justification
	EOT-2	300	With Justification
	EOT-3	180	With Justification
	EOT-4	150	With Justification
	EOT-5	120	With meeting
	EOT-6	280	With meeting
	EOT-7	101	With meeting

The major problem justified in this project is material shortage that the contractor is incapable in delivering materials to the project site on the intended period of the contract. It is justified that this problem is occurred due to Letter of credit/LC case it means due to problem in foreign currency.

The rest two extension of time for project 1 i.e. the fifth and sixth EOT 186 and 180 calendar days respectively are given to the contractor without justification. Which is from the total extension of time 30.2% was granted without justification. Similarly, for the second project 36% of total granted extension of time was without justification.

The client and the contractor carried out formal meeting and negotiating each other about the reason for delay and after that the client extend the completion date without formal time claim by contractor. Therefore consultants carried out the time extension delay analysis subjectively with personal judgment of the professionals and not in procedural and scientific ways as per the standards stipulated in contract provisions.

Liquidated damage

The Liquidated Damage clause, by its nature, is included in construction contracts in order to dissuade the contractor from completing the works late. The contract document they use is PPA condition of contract 2011. For both projectes liquidated damage is not enforced according to the contract agreement agreed.

As the interview with the owner of this project result indicates, the contractors are not financially capable for pay liquidated damage. But the as per the consultants, the client is afraid of enforcing liquidated damage because the client representatives are strongly related with the contractor and they don't want to lose their relationship.

Case study 2

The second case has been conducted from one of public building project which face delay.

The total contract price of this project was two hundred five million nine hundred thirty two thousand five hundred sixty seven birr and ninety seven cents (205, 932,567.97). The total schedule given in contract was 730 calendar days. The total extension of time granted for the second project was 925 calendar days, which is 126.71% of the original contract amount. After approved time extension, the final schedule becomes 1655 calendar days. However, the current status of the project was still 73.19% with time of overrun 31 days with no time extension.

Table 4.22 Approved extension of time for case 2

Table 1 Approved extension of time for case 2

No of extension of time	Granted Date	Remark
EOT-1	190	With Justification
EOT-2	200	With Justification
EOT-3	325	With Justification
EOT-4	120	With Justification
EOT-5	90	Without Justification

The completion time for this building project is extended five times. The first, second, third and fourth Extension of time guaranteed 190, 200, 325, and 120 calendar days respectively. These extension of time was granted with justification. The rest extension of time i.e. the fifth and EOT 90 calendar days is given to the contractor without justification or evaluation of time claim.

Liquidated damage is a solution for the client not to lose once property due to delay but it is not practically manipulated for most of this project. In this project termination was

recommended by consultant. But, as consultants thought that project termination is a headache for the client. If termination is done for one project the client may lose time and extra money in order to commence newly project. So, amicable settlement is a preferable mechanism rather than enforcing liquidated damage. That means even if the contractor is incapable to complete the project the client needs negotiation with the contractor to complete the project to avoid bidding for new contractor.

Due to these delay handling practice the client unable to use that project on time and for the specific function. Delay also affects contractors by so many ways. Like problem of material cost overrun/price escalation, transportation cost and incapable to participate the newly project unless completed the previous project work progress. In another way delay is not good for construction the company profile.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The objective of the thesis is to assess delay handling practice in public building project of SNNPRS. In light of this, the research is meant for to investigate the gap between the existing delay handling practices and the logical and acceptable techniques. To achieve these objectives, the study use questionnaire survey, and case study as a research instrument. The result obtained in this processes have been presented and discussed in the previous chapter. In this chapter the major findings of the research which have been discussed before will be briefly summarized in accordance with the objectives of the research.

Most contractors notify delay after project completion date is over. This indicates the delay notification practice by contractor is not according to the condition of contract, which the contractor must notify delay within 15 days of becoming aware that delay may occur.

The response of consultants for the extension of time request by contractor is on time.

Almost half percent of contractor blame that time extension analysis technique is partially fair. And main factor affecting the evaluation is Lack of professional, technical and managerial skill of consulting firms.

The result shows that 82.8% of contractors and all of consultant and client agree that the detail for time claim request by contractors is not submitted on time. According to consultant's and client's response Poor paperwork control by the contractor were rated as the main reason for delay in submitting the details of EOT but most contractors said that Site staff inexperienced in contract procedures is the main reason behind.

Almost all respondents agree that there is no limit for clients to grant time extension to the contractor.

High proportion of respondents indicated that public owners are not enforce the liquidated damage clauses, 51.7% of contractors and 66.7% of consultant and 100% of client response that liquidated damage is not enforceable in accordance with the contract agreement. Enforcement of the liquidated damage clause in construction contracts in SNNPRS is problematic partly due to Inability of clients to study the contract documents very well and ignored of liquidated damage provision by sympathetic clients are the main reasons for non-enforcement of liquidated damage clauses. In addition relationship between contracting parties and capability and financial status of local contractors are factors which affect the enforcement of liquidated damage.

Non-enforcement of liquidated damage provision, the contractor is not fill responsible for duration of the project and they thought that they would not punished even if the project is delayed and these appreciate project delay, which cause a negative effect like time overrun ,cost overrun dispute.

5.2 Recommendation

- All stakeholders in government building construction projects are not discharging their responsibilities, therefore it is recommended to enhance capacities of stakeholders and all stakeholders should discharge their responsibilities to promote proper delay handling and reduce the effect that caused by poor delay handling practice.
- Contractors should submit intent for time claim on the time stipulated on the contract and the time extension request provide by the contractors shall be fair in order not to generate conflict between parties and to inform the owner or the contract administrator that a problem exists, which could entitle the Contractor to an extension of time claims and/or compensation, if it is provided for by the contract.
- Conditions of contract should clearly state about the limit for extension of time granted by employer in order to give a risk for the contractor in regard to duration of the project.
- Consultants shall use modern management techniques to evaluate the time claims and they should evaluate time claims in impartial, genuine, consistent and professionally and contractually accepted manner rather than evaluating by personal judgment.
- All contracting parties must be accountable for their responsibility and also ethical for their work in order to handle delay issues without interference of friendship and corruption.
- Governmental should have, for public projects, professional who trained about contract administration to handle delay issues in appropriate manner and accordance with the accepted condition of contract.

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APPENDIX

APPENDIX I- QUESTIONNAIRE

Dear Participant

At present, I am working on a research entitled Delay handling practice in public building project of SNNPR for the partial fulfillment of the requirements for the degree of Master of Science (MSc) in Construction Technology and Management at Hawassa University, Institute of Technology. The main objective of this research is **to assess delay handling practice of public building projects in SNNPR and to investigate the impact of delay handling practice on the overall projects**. To meet this research objective, it is necessary to have the response of contractors, client and consultants currently working on the scheme project and hence you are one of the stakeholders recruited to respond this questionnaire. Accuracy in answering the questions included in the questionnaire is necessary to have reliable output of the data analysis. Moreover, your immediate response helps to finish the research timely. I confirm that your response will be used only for the purpose of this research Looking forward to your soonest response.

With Regards

Rahel Negusse

If you have any question or look for clarification on the questionnaire, please contact me on Tel:-09-15-15-82-63 or E-mail:-bkiyarich@gmail.com

PART I: -Background Information

1.1 what is the type of organization you are working?

☐

Client

☐

consultant

☐

contractor

1.2 What is your position in the organization?

1.3 What is your education level?

☐

Diploma

☐

BSC

☐

MSC

☐

PhD

1.4 work experience in building construction (in years)

☐

Less than 2

☐

2-5

☐

5-10

☐

more than 10

PART II: - Delay handling practice

1. What type of Conditions of Contract have you been using?

☐

PPA

☐

FIDIC

☐

Others (Please specify).....

2. Have you faced delay issues on project you have ever participated in SNNPR?

Yes ☐No ☐

3. If your answer is yes how did you handle it?

4. On what occasion does the delay to progress is notified?

☐

When the progress is estimated and consequence is predicted

☐

If the contract requires it

☐

If it is likely to delay

☐

If Others (Please specify).....

5. Did the consultant or the client respond time claim on the time specified in the Contract?

☐

Yes

☐

No

If no why?

6. Did the client accept time claims after approved by the consultant?

☐

Yes

☐

No

If no why

7. Do you think the time extension delay Analysis evaluation technique by consultant is fair and logical?

☐

Yes

☐

Partially

☐

No

If it is partial or no, what factor(s) do you believe behind the problem?

☐

Lack of professional, technical and managerial skill

☐

Negligence to provide the service as per the specified condition

☐

Corruption

☐

If Other (Please specify) _____

8. To what Extent employer and consultant extend project completion time due to their fault?

- ☐ Up to 100 % of the original contract time
- ☐ Up to 200 % of the original contract time
- ☐ Up to 300 % of the original contract time
- ☐ Up to 400 % of the original contract time
- ☐ Haven't known limit

9. Is late submission of details of claims for time extension is a problem?

☐ Yes

☐ No

If you say yes Please rank the reasons for late submission of the details of claims for extension of time

Please indicate on boxes using the following criteria

1. Never 2. Rarely 3. Sometimes 4. Often 5. Greatly often

No	Reasons for late submission of EOT claim	1	2	3	4	5
1	Site staff inexperienced in contract procedures					
2	Engineer requests excessive details					
3	Poor paperwork control by the contractor					
4	Actual delay could not be determined until end of construction					
5	The effects are not known/could not foresee that an event would cause a delay until the delay occurred					
6	Focus on progress of work and not on claim					
7	contractor's staff too busy on other tasks					
8	lack of staff to deal with EOT claims					
9	Contractor does not want to cause friction or offend the employer					

10. Do you believe that liquidated damage provisions are still relevant in construction contracts?

☐ Yes☐ No

11. From your experience do you think that liquidated damage is enforceable for delayed project

☐ Yes☐ sometimes☐ No

If your answer is no or sometimes what do you think the reason behind?

12. What do you lose because of non-enforcement of liquidated damage?

13. Which of the following factors affects the application of Liquidated Damages:

(Please rank using the scale; 1- **Strongly agree** 2- **Agree**, 3- **Slightly agree**

4- **Disagree** 5- **Strongly disagree**

No	Factors	1	2	3	4	5
1	LD are generally overlooked or ignored in by sympathetic clients					
2	Introduction of Fluctuation Clause in Contracts					
3	Inability of clients to study the contract documents very well					
4	Other,(Please specify)					

PART III: - Effect of Delay handling practice**1. What is the effect not enforcing construction clauses related to delay?**

2. What is the effect if the contractor not notify delay according to the contract agreement?

3. Please rank the effect of delay handling practice below in what you consider to be the most influential. The five –point scale ranged from 1 to 5.**1. Strongly agree****2. Agree****3. Slightly agree****4 Disagree****5. Strongly disagree**

No	Effect of delay handling practice	1	2	3	4	5
1	Time overrun					
2	Cost overrun					
3	Disputes					
4	Total abandonment					
5	Low quality of work					
	If other please specify					
6						
7						
8						

APPENDIX II- CASE STUDY: INTERVIEW**For contractor**

1. What is the total cost of the project?
2. What is the original contract period?
3. What is the current status (in %) of the project?
4. How do you handle project delay?
5. When does you notify delay?
6. Have you got any approved extension of time claims?

For consultant

1. How do you handle project delay?
2. When does you respond for time extension request?
3. What procedure do you follow to extend project duration?
4. Did the client enforce liquidated damage?
5. What is the reason for non-enforcement of liquidated damage?

For client

1. How do you handle project delay?
2. Did you enforce liquidated damage?
3. What is the reason for non-enforcement of liquidated damage?
4. What does your company affect because of non-enforcement of liquidated damage?

APPENDIX III - PROJECT DISCRIPTION

Project 1

PROJECT PARTICULARS		
Project :-		
Employer:-		
Consultant:-		
Contractor: -		
CONTRACT SUMMARY		
TIME		
Date of Signature:-		12 th February 2014
Site handover:		15 Calendar days
Mobilization Time:-		15 Calendar days
Commencement Day:-		14 th March 2014
Completion Date:-		13 th March 2016
Original contract Time		- 730 Calendar days
Time extension Due to:		-
a. Supplementary agreement		-
b. Variations		1211
c. Other		1211
Extension of time Approved		1941
Revised Contract perio Revised Completion D		7 th July 2019GC
Time Elapsed In Date:-		1972 Calendar days
Time Elapsed In %:-		103.19%
VALUE		
Contract Value Main Agreement Birr (A):-		453,183,005.41 (Excluding VAT)
Supplementary Agreement (B):-		-
Additional work (C)		-
Variation work (D)		-
Total Amount of Agreement (A+B+C+D)		453,183,005.41 (Excluding VAT)
Vat 15%:-		67977450.81
Grand Total Amount of Agreement		521160456.2
Over all Percentage planned:-		
Over all Percentage of Work done:-		79.72%
PAYMENT		
Total Advance Payment taken (A):- (INCLUDING VAT)		104,232,091.24
Payment Certified to date (B) (excluding VAT):-		345,695,053.25
Payment this month (INCLDING VAT)		15,451,523.62
Advance repaid to date (excluding VAT):-		65,586,936.25

Project 2

CONTRACT SUMMARY	
TIME	
Date of Signature:-	14th June 2013
Site handover:-	15 Calendar days
Mobilization Time:-	15 Calendar days
Commencement Day:-	13th July 2013
Completion Date:-	13th July 2015
Original contract Time:-	730 Calendar days
Time extension Due to:-	
a. Supplementary agreemer	-
b. Variations	-
c. Other	991.00
Extension of time Approved:-	991.00
Revised Contract period:-	1721 calendar days
Revised Completion Date:-	8th April 2018
Time Elapsed In Date:-	1804
Time Elapsed In %:-	104.82%
VALUE	
Contract Value Main Agreement Birr:-	249,660,808.87 (Excluding Vat)
Main Agreement after (2%) rebate Birr (A):-	244,667,592.69 (Excluding Vat)
Supplementary Agreement (B):-	-
Additional work (C)	
Variation work (D)	-
Total Amount of Agreement (A+B+C+D)	244,667,592.69 (Excluding Vat)
Vat 15%:-	36,700,138.90
Grand Total Amount of Agreement	281,367,731.60
Over all Percentage of Work done:-	80.94%
PAYMENT	
Total Advance Payment taken (A) (excluding VAT):-	48,933,518.54
Payment Certified to date (B) (excluding VAT):-	214,578,106.03
Payment this month (including VAT)	
Advance repaid to (EXCLUDING VAT)	42,915,621.21