

JIMMA UNIVERSITY
JIMMA INSTITUTE OF TECHNOLOGY
SCHOOL OF GRADUATE STUDIES
FACULTY OF CIVIL AND ENVIRONMENTAL ENGINEERING
CONSTRUCTION ENGINEERING AND MANAGEMENT CHAIR

**ASSESSMENT OF LIQUIDATED DAMAGE PRACTICES ON PROJECTS DONE BY
MICRO AND SMALL SCALE CONSTRUCTION ENTERPRISES: A CASE IN MIZAN-
AMAN TOWN, SOUTH WEST ETHIOPIA**

A Research Thesis Submitted to School of Graduates Studies, Jimma University, Jimma Institute of Technology, Faculty of Civil and Environmental Engineering in Partial Fulfillment of the Requirements for the Degree of Masters of Science in Construction Engineering and Management

BY

FIKADU KEBEDE HURISO

AUGUST, 2021
JIMMA, ETHIOPIA

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BY
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DECLARATION

I declare that the research entitled “Assessment of liquidated damage practices on projects done by micro and small scale construction enterprises: a case study in Mizan Aman town, south west Ethiopia” is my original work and has not been submitted as a requirement for the award of any degree in Jimma University of elsewhere. Furthermore, all sources of material used for the thesis have been duly acknowledged.

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As research advisor, I hereby certify that I have read and evaluated this research paper prepared under my guidance, by FIKADU KEBEDE HURISO, entitled “Assessment of liquidated damage practices on projects done by micro and small scale construction enterprises: a case study in Mizan Aman town, south west Ethiopia” and recommended and would be acceptable as a fulfilling for the degree Masters of Science in the construction Engineering and Management.

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ABSTRACT

A project is a temporary endeavour undertaken to create a unique product or service. Cost, time and quality performances of the projects are used to measure the project success. Now a day construction projects specifically in Mizan-Aman town are facing time and cost overrun, contractual wise unjustified delays are associated with liquidated. Most of those projects are held by SME construction enterprises.

The objective of this study is to assess the liquidated damage practices on projects done by SME in Mizan–Aman Town administration. The data for this study was gathered both qualitative and quantitative data through detailed questionnaires, desk study and interview of the firms was conducted. Purposive sampling of the research population was followed and analyzed using excels software. The populations of the study were 35 SMEs’ projects in Mizan Aman town and 105 questionnaires were distributed to the stakeholders and 86 Questionnaires were returned and analized. Relative Importance Index (RII) was used to rank the problems in liquidated damage practice and impacts of LD on construction parties. Cronbach’s coefficient was used to test the reliability and Spearman rank relationship coefficient was also used to test their correlation and significance.

From this research, most of the respondents have awareness regarding to LD clauses. Reason for practicing liquidated damage clause in relation to SMEs are Payment of contractor not paid on time, Undetailed work study at initial stage of the project with their (RII=0.823) and Inability of contractor to study the contract documents very well before signing with (RII=0.816) are the most important problems in LD practice. The impacts of liquidated damage on construction parties are LD is accepted as procedure that provides the parties positive, cost effective and time sensitive solution to provide a win-win solution to contracting parties (RII=0.84) and Contractual LD provision indicates the owner’s willingness to submit in timely manner (RII=0.80). To minimize the problem of practicing LD, all parties should have proper organizational and project management practices.

Key Words: *Conditions of Contract, Contract Documents, Impact, Problem of practicing LD*

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ACRONOMY

CSA	Central Statistical Agency
EOT	Extension of Time
FIDIC	Fédération Internationale des Ingénieurs- -Conseils
GCC	General Conditions of Contract
GDP	Gross Domestic product
LAD	Liquidated and Ascertained Damages
LD	Liquidated damages
MoC	Ministry of Construction
MoFED	Ministry of Fund and Economy Development
MoTI	Ministry of Trade and Industry
MoWUD	Ministry of Work and Urban Development
PASDEP	Plan for Accelerated and Sustainable Development for Eradicating Poverty
PMI	Project Management Institute
PMBOK	Project Management Body Of Knowledge
PPA	Public Procurement Agency
RII	Relative Important Index
SBD	Standard Bidding Document
SCC	Special Condition of Contract
SCQSLG	Society of Chief Quantity Surveyor in Local Government
SME	Small and Micro Enterprises
SMME	Small, Micro and Medium Enterprises
SNNPR	South Nation and Nationality People Region
TVET	Technical Vocation and Education Training
UK	United Kingdom
USA	United State of America

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Construction contributes to the national socio-economic development by providing significant employment opportunities at skilled and non-skilled levels. The constructed infrastructure include: Buildings, Transportation systems and facilities which are airports, harbors, highways, subways, bridges, railroads, transit systems, pipelines and transmission and power lines, Structures for fluid containment, control and distribution such as water treatment and distribution, sewage collection and treatment distribution systems, sedimentation lagoons, dams, and irrigation and canal systems, Underground structures, such as tunnels and mines (MoC, 2020).

Construction industry involves uncertainties which emanates from the very nature of the industry, this inherent condition calls for an appropriate and very binding management to achieve the desired need. Therefore, the uniqueness of every project in the construction industry makes it mandatory to ascertain the desired project management scheme in every project.

Projects differ from each other in one or more influencing factors such as client and contractors quality, specification, resource employed, responsibilities delegated and the project environments each of these factor may have decisive effect on development of the project. The project management starts at project development and ends at project completion. Improper management leads the project to claims mostly caused by delay of projects (Ismael, 2006)

Liquidated damages are represented in a fixed sum in a contract, payable in certain circumstances where there is a breach. Liquidated damages have been used as a mechanism for the Employer to encourage the contractor to comply with the work programme in completing the project (Davis, 2014). Moreover, the liquidated damages are considered as compensation due to a breach of contract. Furthermore, it is used as an initial agreement of the Contractor before entering the contract, to pay the damages without having the Employer to prove the loss (Lee, 2006).

In Ethiopia, the most common contract document for building works is the standard bidding document (SBD) for the procurement of works by PPA (2011), the agency prepares the standard bidding document (SBD) to serve as the a point of reference in the preparation of bidding document.

The Ethiopian Ministry of Trade and Industry (MoTI) classifies SMEs in Ethiopia based on capital investment and on the bases of establishment. This is important because the sector accounts for large businesses throughout the country so that proper definition and classification is of essence for policymakers in their dealings with SMEs (Yared, 2012).

According to (Aregash, 2005) states that SMEs are the largest businesses in Ethiopia which accounts over 98% of all business firms and out of this figure the small firms represent around 65% of all businesses in the country. Though the industrial sector of the SMEs is not developing as fast as the service and agricultural sector, the construction sector of the SME is progressing in a good manner.

Among the vast involvement of SMEs construction takes the lions share, delays are becoming the common aspect of those participating in the construction sector in Mizan-Aman town. Therefore, this study will fill the gap with regards to an assessment and enforcement of the associated liquidated and ascertained damages in the region.

1.2 Statement of Problem

As per (Tylor, 2004) states the key role of micro and small business enterprises to the building of indigenous based and growth national economies and advancing technological innovations has created the situation that small businesses collectively have a greater stake in promoting corporate citizenship in general.

Small businesses face many challenges that hinder their growth or even further cause a permanent shutdown. Most micro and small businesses are control by their owners because they could not have fund to hire proficiency to run the businesses for them (Rajjaram, 2008). Apart from the job creating and business opportunity for SMEs to involve in construction sector, it requires an intensive project management skill and contract administration to accomplish the conceived goal. In Ethiopia most of the projects awarded by SME are incurring delay due to

poor management and liable for penalty. If the contractor is not entitled to an extension of time it is liable to pay Liquidated Damages (LDs) for the time period from that deadline to the date when the contractor actually completes the project. Delays are usually linked to LDs though requires contractual justification if it is not entitled to EOT. In Mizan-Aman Town, it is worth mentioning that construction projects awarded to SMEs are incurring project delay. Specifically, the researcher has observed many of those SMEs which are licensed in Mizan-Aman Town and involved in projects of Mizan Tepi University are experienced excess delay. For those delayed projects, LD is not applied practically even if there is LD a clause on their contract document. For this ample reason the researcher need to investigate the practice of liquidated damage clauses in Mizan-Aman Town. To fill the gap of this problem research must be done on assessment on practice of liquidated damages for delayed projects in Mizan Aman Town.

1.3 Research Questions

The research questions that would be answered by this study were:-

- What is the awareness level of stake holders regarding to Liquidate damage in Mizan Aman town?
- What are the problems associated with practicing liquidated damage clauses to SMEs?
- What are the impacts of liquidated damage clauses in construction parties?

1.4 Objective

1.4.1 General objective

The general objective of this study is to assess the liquidated damage practices on construction projects done by micro and small-scale construction enterprises in Mizan-Aman Town.

1.4.2 Specific objectives

To achieve the above mentioned general objective the following specific objectives was performed:-

- To assess the awareness level of stake holders regarding to liquidated damage.
- To identify the problems in practicing liquidated damage clauses
- To assess the impacts of LD clauses on construction parties in Mizan Aman Town in relation to SMEs.

1.5 Significance of the Study

The study has great contribute to the success of future projects held by SMEs by pointing the pitfalls in administering contracts in general, giving awareness about liquidated damages and quantifying and practicing liquidated damages in particular. This study was also helps the client in Mizan Aman Town by protecting from contractors' (SMEs) poor time performance and to balance the adequate protection of clients, whilst ensuring that SMEs are not also penalized by over compensating clients.

1.6 Scope of the study

This study was conducted in some selected area of public construction project found in SNNPR Region located in Mizan-Aman town. In this research work, Mizan-Aman Town as owner and client supervisor and SMEs as a contractor are constituted in the study population. Contractors in this research work are SMEs which are licensed under Mizan-Aman town. Consultants/ client counterpart here imply engineers employed in Mizan-Aman town construction office employed in Mizan-Aman town.

1.7 Organization of the Study

The paper is organized in five chapters:

- The first chapter deals about the introduction, problem statement and the study objectives
- The second chapter covers the review of related literatures.
- The third chapter is about methodologies followed to achieve the required objective
- The fourth chapter dealt with Result and Discussions and
- The last chapter is conclusion and recommendations

CHAPTER TWO

LITERATURE REVIEW

2.1 Definition of Project

Many people and organizations have defined what a project is, or should be, but probably the most authoritative definition is that given in BS 6079-1 Guide to Project Management, which states a project as: ‘A unique set of co-ordinated activities, with definite starting and finishing points, undertaken by an individual or organization to meet specific objectives within defined schedule, cost and performance parameters’ (Albert, 2006).

Organizations performs work, Works generally involves either operations or projects, although the two may overlap. Operations and projects share many characteristics; for example, they are: Performed by people; Constrained by limited resources; Planned, executed, and controlled. Operations and projects differ primarily in that operations are ongoing and repetitive while projects are temporary and unique (A Guide to the project management body of knowledge PMBOK Guide, 2013).

On the other hand, according to PMI (Project Management Institute) Standards Committee, a project has defined as a temporary endeavour undertaken to create a unique product, service, or result”. The temporary nature of projects indicates that a project has a definite beginning and end. Every project creates a unique product, service, or result which means that it is different in some distinguishing way from all similar products or services (PMBOK guide 2013). As stated in the definition, a project has a definite starting and finishing point and must meet certain specified objectives. Broadly these objectives, which are usually defined as part of the business case and set out in the project brief, must meet three fundamental criteria (Albert, 2006).

- i. The project must be completed on time;
- ii. The project must be accomplished within the budgeted cost;
- iii. The project must meet the prescribed quality requirements.

2.2.1 The Construction Projects

There is a very wide range of possible project types. A project is defined, whether it is in construction or not, by the following characteristics: A defined goal or objective; Specific tasks to be performed; Defined beginning and end; Resources being consumed. The goal of construction project is to build something. What differentiate the construction industry from other industries is that its projects are large, built on-site, and generally unique. Time, money, labor, equipment, and, materials are all examples of the kinds of resources that are consumed by the project (Wubishet J. , 2006).

Therefore, a construction project is a temporary endeavour with specified time & cost, initiated to create a unique product, service or result. As examples, the following sections are some common types of acceptable construction projects that the Company has undertaken:

- Building Structures
- Engineering Structures
- Geotechnical Investigations
- Civil Engineering Earthworks
- Project Management and Contract Administration
- Master Plans and Feasibility Studies
- Environmental Engineering
- Hydraulics, water resources and irrigation engineering
- Water supply and sanitary engineering
- Transportation engineering
- Drawing and architecture
- Estimation and specification
- Management techniques
- Surveying
- Valuation

On the other hand, Construction also defined as the conclusion phase of the civil engineering system, following theory and design. It is the position of the constructor to show the ideas of the planner and the specified plans of the designer into bodily truth. The owner is the last consumer

of the product and is often the majority for civil engineering tasks. No longer handiest does the constructor have a duty to the contractual owner, or consumer, however also a moral obligation to the general public to perform the paintings so that the final product will serve its feature economically and effectively (Chen W.F and Richard Liew J.Y, 2003).

According to (Muir, 2005) stated that the main objective of project administration is to achieve objectives and targets through the planned consumption of assets that meet the project's quality, time, scope, and security necessities.

2.2 Micro and Small-Scale Enterprises

2.2.1 Overview of SME

According to (Beyene, 2007) suggests around the world there's no common definition of the SME's. In spite of the fact that the measure criteria (number of workers, deals turnover, Resource measure size measure estimate add up to capital venture and the like), and Financial criteria (market share, freedom and personalized administration) are the two primary approaches utilized to define SMEs. Within the case of Ethiopia, until later times there's need of uniform definition at the national level to have a common Understanding of the SME division. Whereas the definition by Service of Exchange and Industry (MTI) employments capital venture, the Central Measurable Office (CSA) employments business and favors capital-intensive advances as a measuring stick.

This sector has different labels and the names will vary from country to country. For example, in the USA (US, 2010), Japan (JSBRI, 2012), and China (OECD, 2016), they call it small and medium enterprises (SMEs), in India, micro, small and medium enterprises (MSMEs) and in Ethiopia micro and small enterprise (MSEs). The importance of small and medium enterprises (SMEs) across the globe has grown both in absolute and relative terms (Loveman, 1991). For instance, Japan has recovered from the disaster of the great earthquake by the role of SMEs with their strong community's ties (JSBRI, 2012). In the US, SMEs expect to double exports within 10 years and the government has created several initiatives for the development of the sector (US, 2010). The promotion of small-scale enterprise in Ghana is on the agenda of development institutions and agencies, both public and private (Arthur, 2002). They have a crucial role in the Chinese economy providing about 80% of the jobs in urban

China (Liu, 2010). The manufacturing sector in Sub-Saharan Africa is dominated by very small and informal enterprises, and the majority of them grow only when they are young (Bigsten, A.; Soderbom M., 2006).

The least developing countries like Ethiopia see MSEs as an effective tool for poverty reduction and sustainable development and hence achieve PASDEP /Plan for accelerated and Sustainable Development for Eradicating Poverty / & Millennium Development Goal (David, W.Bordoli; Andrew, N.Baldwin, 1996).

In Ethiopia National Micro and Small Enterprise Strategy was developed by the government in 1996/97. However, Micro & Small Enterprise Development Program in Ethiopia has been given due attention by government since 2004/2005 (Konjit, D., 2015).

Until 2004/2005, the national strategy was implemented by Federal SMEs Development Agency organized only at national level. Because of this, it was very difficult to make the strategy practical specially in delivering business development service for SME operators. Thus, by considering the critical role of the sector and the challenge faced by SME operators since 2004/2005 the government of Ethiopia decide to establish SMEs coordinating body at regional level.

2.2.2 The roles of SMEs

According to (Kesper, 2000) suggested that SMMEs are the real potential engines of wealth creation, value reorientation, job creation and poverty eradication in developing countries of Africa. There are, therefore, sound economic and social reasons for promoting SMEs:

- Micro enterprises are generally associated with more labor intensive production and are hence perceived to have a high labor-absorptive capacity
- From the economic point of view, it is generally believed that optimizing the contribution of micro enterprises to employment and economic development could be translated into the following broad objectives
 - ✓ Raising the rate of formation of new micro enterprises with growth potential and increased contribution to investment, employment and income generation

- ✓ Increasing the rate of economic ownership; increasing the rate of graduation of micro enterprises into larger categories
- ✓ Raising the performance of existing micro enterprises with a view to increasing their competitiveness and
- ✓ Decreasing the undesirable mortality rate of micro enterprises

(Endalkachewu, 2008) citing CSA 2003 in his research stated that small medium and Micro enterprises (SMEs) are a special focus of the government, given that they comprise the largest share of total enterprises and employment in the non-agricultural sectors. Here the potential contribution of SMEs to value creation, contribution to investment and economic development of the nation rarely stated. In recognition of the important role SMMEs have to play in creating income and employment opportunities and reducing poverty, the government drafted its first Micro and Small Enterprise Development Strategy in 1997 (<http://www.microlinks.org>, 2009) opined that in many countries, microenterprises - small, informally organized commercial operations constitute the majority of businesses. They account for a substantial share of total employment and gross domestic product (GDP) and they contribute significantly to poverty reduction. It is argued that these enterprises are a predominant source of income and employment for hundreds of millions of people worldwide. The SMME sector's influence on individuals, households and national economies is clear and profound. These contractors play a significant and critically important socio-economic role in developing countries. It is therefore important that SME contractors be well equipped to effectively manage their construction enterprises from the perspective of the environment, health and safety, as well as from business sustainability, which contributes to the socio-economic development of local communities and society at large.

According to (Rwelamila, P.D., 2003) "the dynamic roles of SME contractors in developing countries cannot be overemphasized. Such enterprises have been identified as the means through which the rapid industrialization and other developmental goals of these countries can be realized". However, (Rodrick, L. Chilipund , 2010) in his research noted that some authors have contended that the job creating impact of SME contractors is a statistical fault: it does not take into account offsetting factors that make the net impact more modest. It is argued that increase in

employment within SMEs is not always associated with increase in productivity. Nevertheless, the important role performed by these enterprises cannot be overlooked. SME contractors have advantages over their large-scale competitors. They are able to adapt more easily to market conditions given the flexibility of their businesses.

2.2.3 Classification of SMEs

i. Industrial Sectors (manufacturing, construction and mining):

It operates with 6-30 persons and/or with a paid-up capital of total asset Birr between 100,000(one hundred thousand) and not exceeding Birr 1.5m. (FeMSEDA, 2013).

ii. Service Sector (retailer, transport, hotel and Tourism, ICT and maintenance service)

It operates with 6-30 persons or/and total asset, or a paid-up capital is with Birr between 50,001 and not exceeding Birr 500,000 (FeMSEDA, 2013).

2.2.4 Enrolment of SMEs in construction sector

The significance of the contribution of SMEs to national development goals in general and to the local economy in particular, is being recognized increasingly in many developing countries.

Small and Micro scale businesses exist in nearly each industry. They can run from mom-and-pop comfort stores to little fabricating plants. Extra sorts of small-scale ventures can incorporate secretly possessed eateries, law firms, hotels, pastry shops, building and building firms, dry cleaners, coffee house and development contractors (Enhassi, 2009).

Therefore, closer attention is being paid to the factors that promote the growth and development of this sector. This being the fact, different studies indicate the sector faces a range of legal, regulatory and other constraints that can limit its role of creating new employment opportunities, poverty alleviation and fostering economic growth. (Endalkachewu, 2008), citing Ishengoma and Kappel, (2006) categorized factors hindering the performance of Micro and small enterprises into three, namely internal, external and inter firm. The challenges of construction project administration in Ethiopia are low capacity of household private temporary workers in information, ability, hardware, finance and deficiency of construction materials MoFED (2010), legally binding and bureaucratic issues (Seid, K, 2008).

2.3.5 Constraints faced by SME contractors

According to (Buys, 2006) one of the biggest problems in the construction industry is that of the endless disputes between the client, the professional team and the building contractors regarding the valuation and payment of the monthly interim certificates. (Harris, 2000) noted that resolving disputes has been part of routine management function of project participants. He stated that the most significant issues facing the construction manager before litigation or arbitration is invoked are the pricing of variations, disputes regarding payment certificates and the repudiation or cancellation of the contract. (Edmond, G.A.; Miles, D.W.J., 1994) investigated the role that SMME contractors play in the construction industry in developing countries. The growth of a country is linked to an increase in productivity of SMME contractors in the construction market. Specific areas where SMME contractors could improve their efficiency and profitability, for example, site organization were identified. A key constraint was the need for up-grading the managerial and technical competencies of the contractors. The first step would be to appraise the contractors of skills gaps in their workmen. This would be followed by a properly planned programme to meet the identified training needs which is still a problem in developing countries like Ethiopia. The dominance of foreign contractors creates what is referred to as the “Missing Middle” of the contracting business. There is therefore an opportunity for SMME contractors to develop their market share and to become medium size.

They would however have to improve to compete with large foreign contractors. As per (ILO, 2006) proposed a set of guidelines for the development of SMME contractors in developing countries. The study not only acknowledged the potential contribution of SMME contractors to the growth and efficiency of the local economy, but also identified major constraints facing the construction industry sector. The constraints were classified as difficulties presented by:

- A particular market and the business environment in which the contractor is operating (for example steady availability of work, material and labor);
- Client/consultants (for example incomplete design information and delayed payment);
- Shortcomings and inadequacies of the contractor (for example, knowledge and familiarity with technical, legal, financial and managerial issues).

The (ILO, 2006) study highlights deficiencies in planning and management skills as the greatest stumbling block among SMME contractors and advocates simple planning and record keeping tools which make a marked difference in the success of SMME contractors. The (Mentor, R., 1985) investigated the usefulness and the empirical application of project planning and control techniques to SMME contractors in South Africa. Among Mentor's important findings are that SMME contractors do not:

- Pay sufficient attention to formal planning and control of operations;
- Keep proper records of the progress of jobs; and
- Record important duties and instructions in writing.

While (Mentor, R., 1985) indicated that small businesses do not have the resources and time to install and maintain extensive record keeping facilities, he insisted that managers of SMME contractors should plan their operations thoroughly. The survey also revealed personnel problems as most prominent, followed by poor administration, lack of management experience and issues relating to clients and the suppliers of material. (KK Chitkara , 2003) maintains that inadequate documentation is a source of much dissatisfaction in the construction industry, mainly because existing contracts are biased in favor of the client and professionals. (Rodrick, L. Chilipund , 2010), in his research also examined the construction industry in developing countries and concluded that highly developed managerial and supervisory skills are crucial for the efficient execution of construction projects. (KK Chitkara , 2003) listed the basic skills that a successful contractor should have as:

- Ability to read and interpret drawings;
- Ability to understand the complexity of tendering and contractual procedures;
- Knowledge of insurance, bond and other legal necessities; and
- Having secure, sufficient working capital and material credit to finance projects, whether payment by clients is delayed or not.

(ILO, 1987) regards deficiencies in planning and management skills as being probably the greatest single stumbling block among SMME contractors. Common examples of these deficiencies manifest in the inability to compile a material procurement schedule, include productivity checks during a contract, anticipate possible delays and plan transport requirements.

SMME contractors clearly do not need the sophisticated management tools that large contractors commonly use. However, the need for planning techniques is critical at the SMME contractor's level, since profits are usually small and consequently margins for errors are small. (ILO, 1987) reported that SMME contractors often have to contend with problems originating from the client (for example, incomplete drawings and specifications) because most clients assumptions made are that the contractor knows what to do.

This often results in important cost information being left out of the tender document. In addition, inexperienced clients tend not to be sophistic about accuracy and quality of workmanship. Consequently, SMME contractors often find that they have to do a costly remedial work when less expensive solutions could possibly have been utilized. This tendency presents a serious constraint to the development of a domestic contracting industry. (ILO, 1987) observed that SMME contractors, especially in developing countries, are frequently experiencing problems when dealing with professionals. This is because professionals tend to expect higher levels of quality in the work and services from the contractor than what the contractor can actually deliver. When the work is condemned, it is the contractor that has to re-do the work as instructed by the Engineer in order to obtain the expected standard.

For instance, the client does not make payments within the agreed period the contractor might blame it on the consultants who are responsible for promptly notifying the client about the payment issues. Sometimes there might be disagreements with the valuation of work in progress. In such instances the quantity surveyor has to physically re-measure the work done on site to reach agreement on the quantity of work to be certified. A report of contractor development undertaken by the Tanzania Civil Engineering Contractors

Association (TACECA, 2003) noted that current business conditions in Tanzania do not favor the participation of SMME contractors in the country.

According to (TACECA, 2003), due to bureaucratic and budgetary constraints, the government has thus far been unable to provide a sustainable environment of continuous work flow for the SMME contractors. The problem is worsened by an inefficient payment process in which

payment is delayed for months and this is seen as normal. The deficiencies in contracting and managing contracts are due to:

- Lack of technical skills;
- Lack of experience in preparation of contract documents;
- Poor site organization;
- Poor programme design and construction practice;
- Many variation orders;
- Poor equipment; and
- Poor project management.

A need assessment carried out by (TACECA 2003) identified the major constraints faced by SMME contractors in Tanzania. These are:

- Lack of capital;
- Lack of equipment;
- Inadequate training;
- Inadequate access to appropriate technology;
- Inadequate technical and business skills;
- Policy and advocacy issues; and
- Inadequate co-operation among stakeholder

2.3 Construction contracts

According to (Elbeltagi, E, 2002) characterizes a contract as: "assertions made between two or more parties which are enforceable by law to supply something in return for something else from a second party". Contracts can be exceptionally straightforward or they may be exceptionally long and complicated legitimate archives. When a contract is appropriately set-up it is legitimately official upon. The two parties are anticipated to perform the different commitments they have attempted, as communicated in a commonly concurred set of contract records. A contract hence, is essential to ensure both client and contractor. Agreeing to its basic definition, a contract is an understanding enforceable at law, but not all assertions are contracts. A few

components must be display some time recently an agreement becomes a contract. According to the Global Construction Survey, r. Liquidated damages are incorporated into construction contracts as a form of risk mitigation, in terms of project completion and damage compensation, to the parties involved. When this clause becomes applicable and what its corresponding monetary value is, is dependent upon a number of aspects defined within the construction contract.

2.4 Contractual completion date

Liquidated damages within construction pertain to chargeable monetary amounts for failure to meet and maintain contractual obligations. These contractual obligations are most commonly broken with regards to the project's contract completion date or interim completion dates. Defined within the construction contract, the contractual completion date, and any interim completion dates are typically established as "the number of days of performance instead of a specific date of completion in order to accommodate the uncertainty of when a project may be authorized to proceed" (FindLaw). A liquidated damage provision is thus applied to any day that exceeds this completion date of the contract. In addition, interim dates commonly referred to as milestones, can be defined within the contract and thus failure to meet milestones can also result in liquidated damages. Since liquidated damages follow each day after the contractual completion date, "completion" must also be defined. What constitutes "completion" is often disputed within the parties involved and can result in disagreements within owner and contractors. Within construction, the concept of substantial completion has filled this void to help clarify contractor completion. Substantial completion is defined within the US legal system as compliance with the contract, consisting of the following:

- a) Necessary approval by public regularity bodies/authorities
- b) The owner has received all required warranties and documentation
- c) The owner may enjoy beneficial use or occupancy and may use, operate, and maintain the project in all respects, for tis intended purpose. (USLegal.com)

2.5 Extension of Time

Extension of time (EOT) is the additional time granted to the contractor to relieve it from liability for liquidated and ascertained damages (LADs) and to prove an extended contractual time period or date by which the works are to be, or should have been completed. (Hamid and Torrance, 2006) identified extension of time (EOT) as an excusable delay that occurs when the contractor is delayed by occurrences beyond his control.

2.5.1. Basis of Extension of Time

(James. R. Knowles, 2005). Stated 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.

Many disputes could be avoided if employers and their agents (Engineer, Consultant) give due consideration to the reasons for having an EOT provision, and if contracts recognize the need for giving sufficient notice and particulars to enable extensions of time to be granted promptly. 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 rely 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.

(James. R. Knowles, 2005). Further, even if there is an EOT provision, if the engineer, or the consultant, or employer fails to grant an EOT, within the period contemplated by the contract, the employer may lose its rights to grant an EOT, and the result would be the same as if there had been no EOT provision, i.e. time would be set at large and the employer could no longer rely on the liquidated and ascertained damages provision on the contract

2.5.2 Extension of time submissions

Major obstacles to prompt settlement of submissions for extensions of time includes:

- The erroneous assumption that an extension of time automatically grants entitlement to monetary compensation

- Late, insufficient or total lack of notice of delay or likely delay on the part of the contractor.
- Failure to maintain contemporary records.
- Failure to regularly update the program so that the effects of delay can be monitored.
- Poor presentation of the claim to show how the progress of the work has been, or is likely to be, impacted.
- The probability that the cause of delay will reflect on the performance, or lack of it, on the part of the employer's professional team.
- Pressure, on the part of the employer, to complete the project by the original completion date, irrespective of delays which occur.

2.5.3 Guideline for preparing comprehensive extension of time (EoT) claim

A practical approach that is recommended to be followed to enable the contractor to prove the delays and build a well-supported approach was based on a combination between the theoretical information and practical experience. (Khaled Ahmed Al-Naas, Dec.2014).

This approach consists of;

- (1) Preparing the baseline program (planning stage),
- (2) Proper program updates,
- (3) Accurate program revisions,
- (4) Defining and introducing the delays to the program updates,
- (5) Identifying the concurrent delays and splitting between the contractor and employer delays,
- (6) Defining the contractual basis for the entitlement, and finally
- (7) Preparing the evidences of delay.

Normally, preparation of the baseline program starts with the identification of the activities required to execute the work in accordance with the project work breakdown structure and contract plan and specification.

The next step in producing the baseline program is to calculate the durations required to execute each activity on the network.

After time estimation and loading the resources, the mathematical calculation using CPM will be conducted to determine the chain of interrelated activities through the network from the

project start to its completion date. The early dates and critical path will be defined during forward calculation while the late dates and floats will be calculated during the backward calculation.

The Employer's Personnel shall be entitled to rely upon the program when planning their activities'. The initial delays occurring during the baseline program approval period have no proper basis to measure and are debatable. Hence the recommendation is that the delays that occurred during this period should be properly recorded and monitored by giving advance notices to the employer for the requirement of any urgent information by referring to the first submittal of the program.

2.6 Delays in construction

As presented by (Shaikh, A.W; Muree, M.R; Soomro , A.S;, 2010), delay is one of the most common, important and serious problem which impacts the time factor with relation to cost of projects in the Construction Industry, identified four delay factors representing reason of late in development projects. They are client problems, contractor problems, resources problems, and general problems.

(Enhassi, 2009) conducted looking over which show that the foremost vital variables influencing venture execution are: delays since of materials deficiency; inaccessibility of assets; moo level of extend administration abilities; acceleration of fabric costs; inaccessibility of profoundly experienced and qualified faculty; and destitute quality of accessible hardware and crude materials. Agreeing to (Frimpongs, et al 2003), improper planning and administration involvement confinement causes time and cost overrun.

(Ismael, 2006) classifies a project in to three phases: Project conception, Project design and Project construction. Project conception is the recognition of a need that can be satisfied by a physical structure. The project design phase translates the primary concept in to an expression of a spatial form, which will satisfy the owner's requirement in an optimum economic manner.

(Nigussie, 2016) summarized the general delay causes into two broad categories,

- i. Pre-construction events causing delays during construction stage (this includes events that occur during project conception, project design and project contracting).

(Wubishet J. , 2006) stipulates the causes of delay and taken a toll overwhelm emerging from pre-construction arrange that lead to claims and debate are brought about due to the presence of tall instability amid the early stage of project, which have the foremost likely impacting control on the project.

(Sasmi, M , Fereig , Nabil Kartam, 2019) talks about a few of the conceivable reasons why some construction contracts don't accomplish the initial program to completion of the execution of the works on time and inside budget. These reasons are

The design is not complete or subject to late change and additions

- The overall duration of the contract program is not realistic
- Available site resource levels have not been considered in the program
- The lack of resources further down the supply chain
- The program network does not respond realistically to changes
- The contract conditions do not encourage open discussion on progress between the Employer and the Contractor.

- ii. Construction stage events causing delays

(Syed & Salman, 1999) pointed out that causes of delays that the construction industry is facing nowadays during implementation stage are:

- Possessive decision-making mechanism
- Highly bureaucratic organization
- Improper inspection approach
- Different attitude between the consultant and contractor
- Financial difficulties
- Inexperienced personnel

- Deficiency in project coordination
- Inadequate and old equipment

2.6.1 Types of delays

Delays can be grouped in to the following four broad categories according to how they operate contractually (Syed & Salman, 1999).

i. **None-excusable delays**

(Syed & Salman, 1999) define Non-excusable delays are delays, which the contractor either causes or assumes the risk for. These delays might be the results of underestimating of productivity, inadequate or scheduling or mismanagement, construction mistakes, weather, equipment breakdowns, staffing problems, or mere bad luck. These delays are inherently the Contractor's responsibility and no relief is allowed. These delays are within the control of the contractor or are foreseeable; however, it is not necessary that they be both. In general, if the delay is found to be non-excusable, then the contractor gets no time or money and pays liquidated damages

ii. **Excusable non-compensable delays**

When 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 means 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. The contractor gets time, but not money if Non-compensable Excusable delays occur, but he is relieved from liquidated damage (Syed & Salman, 1999).

iii. **Excusable compensable delays**

(Syed & Salman, 1999) imply in addition to 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.

iv. Concurrent delays

(David, W.Bordoli; Andrew, N.Baldwin, 1996) states there will no endeavor be made here to entirely characterize concurrency other than, from the definition, more than one delay happens at the same time. The issue appears to choose which of the delays, in case any, comes about in delay to the completion of the extend and in the event that there's a variety of causes, in the event that the temporary worker is to recover misfortune and expenses.

2.6.2 Causes of Delay

There are many factors that contributed to causes of delays in construction projects. These range from factors inherent in the technology and its management, to those resulting from the physical, social, and financial environment. There are in total of seven groups of causes for delay in

- Causes of delay by client
- Causes of delay by contractor
- Causes of delay by Consultant
- Causes of delay by materials
- Causes of delay by equipment
- Causes of delay by labors
- Causes of delay by external factors

2.6.3 Identification of delay

Usually causes are categorized as contractor risk events, or employer risk events. Until any of these events are confirmed as having caused actual delay or intended to cause expected delay, they are only risk events. The type of the contract is a factor in defining the risk events and its allocation. For example, lump sum price and EPC contracts have the highest risks to the contractor and lowest to the employer while the re-measured contracts have the lowest risks to

the contractor and the highest to the employer. Contractor's risk events in general are limited to the following:

- Wrong assumptions;
- Poor planning;
- Unrealistic activity duration or interrelationships;
- Low productivity of resources;
- Lack of manpower and machinery resources;
- Poor quality of work; (extensive remedies)
- Commitment to HSE requirement;
- Financial issues; and
- Late delivery of the required materials.

Any delays that can occur due to any such events are non-excusable and non-compensable delays and the contractor is responsible to recover such delays at its own cost otherwise the contractor will be subjected to the application of penalties or liquidated damage clauses as stated in the contract (Abrham, 2008).

Employer's risk events in general are the following:

- Delay in handing over the job site;
- Use or occupation by the employer of any part of the permanent works, except as may be specified in the Contract;
- Different physical conditions from those provided during the tender stage;
- Changes to the original contract scope;
- Late engineering deliverable;
- Late procurement deliverables;
- Frequent revisions for engineering deliverable;
- Delay in approval above the contractual allowance;
- Delay in payment,
- Out of sequence for engineering and procurement deliverables;
- Suspension of the work;
- Adverse weather conditions;

- Changes to project specifications;
- Force Majeure (War, hostilities, invasion, act of foreign enemies' revolution, terrorism, sabotage by persons other than the contractor's personnel, or civil war within the country, etc.); and
- Existing underground utilities which are not shown in the as-built drawing received by the contractor during the tender stage.

Any delays occurring due to such events are excusable and compensable delays but the contractor at the same time is responsible to mitigate totally or partially the impact of such delays (Abrham, 2008).

2.7 LDs and Penalties

Liquidated damage means the compensation stated in the contract as being payable by Contractor to the Public Body for failure to perform the contract or part thereof within the periods under the contract, or as payable by Contractor to the Public Body for any specific breach identified in the contract (PPA 2011).

LDs are different from penalties; the former operates on the principle of *restitutio in integrum*, while the latter is based on *in terrorem* (The Latin phrase '*in terrorem*' translates into 'in fear or terror' of something or an action). The definitive ruling on the distinction between LDs and penalties came from *Dunlop Pneumatic Tyre Company v New Garage and Motor Company Ltd*. The case established that the core feature of LD is in being a genuine pre-estimate of loss (Eggleston, 2009).

In estimating LDs, it should be as close as practically possible to the losses the client would be liable to suffer if the delay occurs (Eggleston, 2009). These typically take into cognizance possible costs of financing, alternative accommodation or rent charges and lost income.

Secondly, a penalty is an amount of money stipulated as '*in terrorem*' of the offending party but LD is a genuine, agreed pre-estimate of damage(s). Additionally, determining whether a stipulated sum is a penalty or LD should be decided upon at the time of making the contract

within its terms and relevant circumstances, not at the time of the breach; it should not be left to doubt or a matter of construction (Eggleston, 2009).

2.8 LADs in construction contracts

The common approach to handle losses incurred by a client for delays suffered in a construction contract is the Liquidated and Ascertained Damages (LAD) clause. This is contractual clause stating a pre-determined amount due a project client, which may be a per diem charge per day, week or month according to the extent to which a contractor is unable to deliver a project as scheduled (Greenwood, et. al 2005). In most cases, the client deducts the LAD from payments owed to the contractor prior to the breach (Eggleston, 2009). In ensuring that LADs for construction projects are enforceable, (Schmidt and Facundo, 2008) recommend that the following should be considered in its determination: the difference between construction period interest, permanent loan interest, temporary rental and relocation costs, lost profits, loss of the ability to manufacture.

Liquidated damages clauses are fundamental in guaranteeing that the harmed party is compensated decently in case of a breach of the development contract. As such, both parties are bound by the law to honor and follow to the terms and conditions of the contract by standing by the various clauses that characterize the complete process. The clauses are pointed at streamlining the method and bring around the expected levels of victory within the contract. The clauses are decided by the common law that administers the individuals within the society (Wissam, 2016).

For instance, the penal clause ascertains that the main aim of its enforcement is to pay for the damage inflicted on one party by the other and not to punish him or her in the case of a breach of the underlying contract. In this case, the penal damages of the clause are distinguished from the punitive damages in that it is upheld as a way of compensating the party whose terms have not been met and not to punish the wrongdoer (J. R.Murdoch and Will Hughes, 2006).

2.8.1 LD clauses discussion on liquidated damage

(Eggleston, 2009) depicts it can be troublesome and costly to set up the exact sum of harm that flows from a specific delay, and thus in their contract the parties may concur in progress a figure

for liquidated damages to be paid by the temporary worker on the off chance that it could be a Punishable Delay. In the event that an Expansion of Time (EOT) is hence allowed in connection to that period of delay, the boss must pay to the temporary worker the sum of exchanged harms deducted, up to the modern completion date.

A liquidated damage dodges the need of legitimate necessities which are required for avocation of harm opposite to other harms. The Employer as it were should demonstrate that a breach has happened and the calculation based on a gauge of the costs coming about from the non-performance (Turner and Towsend plc, 2009).

2.8.2 The enforcement of the penalty/LD clause.

(Wissam, 2016) depicts delay punishments are frequently included as a legally binding term in an exertion to hold temporary workers responsible to a timeline whereas moreover giving emolument to the company on the off chance that the venture goes past the due date for completion though Sold harm arrangements are too related to delay punishments, but are ordinarily upheld in an unexpected way. Exchanged harm arrangements are planned to ensure the boss from development delays that would constrain operations and incomes; in any case, this arrangement indicates precisely the sum paid due to particular circumstances.

2.8.3 Defences / Challenges to liquidated damages

Contractors faced with the deduction of liquidated damages or an action to recover the same do not always accept that deductions are justified or due. This may be because of extension of time disputes; because of perceived legal flaws in the contractual provisions for liquidated damages; or because of alleged maladministration by the contract administrator.

As per (Eggleston, 2009) summarizes the common defences put forward by contractors when faced with liquidated damages

- Extension of time due
- Completion achieved earlier than certified
- Certificates not valid
- Conditions precedent not observed
- No date for commencement

- Prevention
- Provisions void for uncertainty
- Waiver / estoppel

2.9 Determination of LDs amount

(Thomas, R.,Smith, G,R and Cummings, D.J, 1995) states LD amounts specified in construction contracts must also not be disproportionate as to over compensate, profit, or unjustly enrich the injured party. High LD amounts increase the reluctance of contractors to bid for projects or increase the contingency amounts in their bids to cover the possibility of paying damages. High LD amounts compared with the likely damages may also be considered a penalty and render the clause unenforceable whereas low LD amounts on the other hand, also do not fully compensate clients for delays.

(Carty, 1995) concluded LD amounts must therefore be reasonable and consistent with the cost an owner is likely to incur in the event of late completion, and the courts will enforce LD provisions when they are fair and reasonable estimates of anticipated losses and delays considered inexcusable.

2.9.1 Determination of LDs amounts in Ethiopia

In Ethiopia, the most common form of contract for building works is the standard bidding document for the procurement of works by (PPA 2011), the agency prepares the standard bidding document (SBD) to serve as a point of reference in the preparation of bidding document. The SBD in its general condition of contract (GCC) clause 49 provides

- i. The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Special Conditions of Contract for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the Special Conditions of Contract. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.
- ii. If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor

by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in Sub-Clause 43.1 (SBD, 2011).

On the other hand, in GCC clause 18 of PPA 2011 the conditions under which liquidated damage shall not be paid was stated.

For the purpose of contract “force majeure” shall mean an event or events which are beyond the reasonable control of contractor and which makes a contractor’s performance of its obligation here under impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes:

- (a) An official prohibition preventing the performance of a contract,
- (b) A natural catastrophe such as an earthquake, fire, explosion, storm, floods, or other adverse weather conditions, or
- (c) International or civil war, or
- (d) Other instances of Force Majeure identified as such by the civil code.

Except as provided under GCC Clause 18, (force majeure) if the Contractor fails to carry out any or all of the Works within the period specified in the Contract, the Public Body 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 of 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.

If the delay in performing the contract affects its activities, the Public Body may terminate the contract by giving advance notice to the Contractor pursuant to GCC Clause 21 without any obligation to wait until the penalty reaches 10% of the value of the Contract. (PPA 2011)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Study Setting/Area

The study area of this research was Mizan-Aman town which is located in the Southern Nations, Nationalities and People's Region (SNNPR). Mizan-Aman town is the largest town of Benchi Sheko zone and two sub city namely Mizan and Aman. The town is suited at a distance of 568 and 836 kilometers south west of Addis Ababa and Hawassa respectively. The town is also found at a distance of 50 and 230 km from Tepi and Jimma respectively. The town is found in an area of average an elevation of 1451 meters and has a 7°0'N latitude and 35°35'E longitude Coordinates.

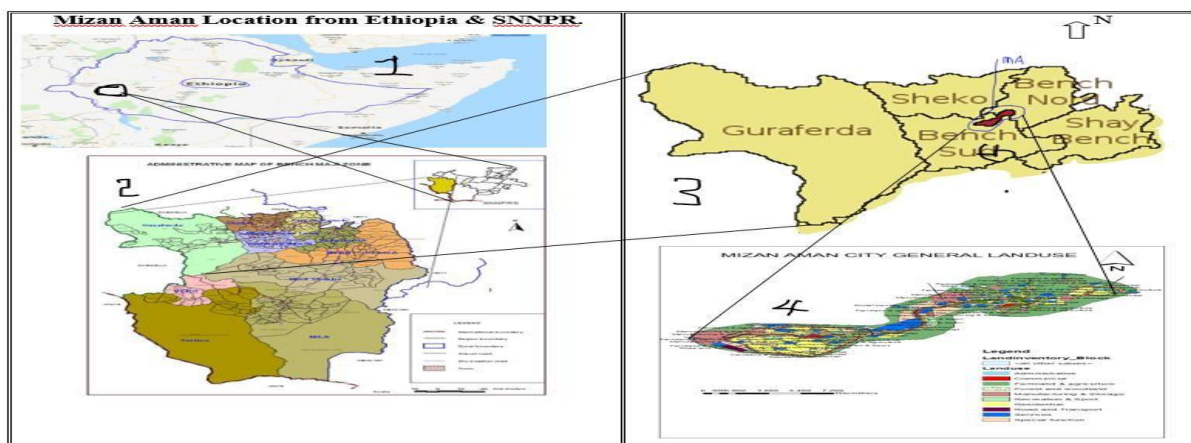


Fig 3. 1 Map of Mizan Aman Town, SNNPR & Benchi Sheko Zone

3.2 Study design

The basic research design is an exploratory research methodology using both primary and secondary data. This study was designed to explore the extent to which LD provisions in construction contracts in Mizan Aman Town protected clients from contractors' (SMSs) poor time performance. It examined the awareness of stake holders regarding liquidated damage, the problem practicing to implement LD and impacts of LD clauses in construction project to balance the adequate protection of clients, whilst ensuring that SMEs are not also penalized by over compensating clients. The methods to be employed are therefore cognizant of these aims.

The study adopted both qualitative and quantitative approach of enquiry. The questionnaire was carefully designed in mix of both close and open-ended questions. The interview and desk study were also used to support responses and arguments found by questionnaire. Accordingly, the respondent's answers the question for their awareness of LD and assessment methods of LD based on previous experiences. After expressing their awareness they are asked to rate the problem enforcing to implement LD and impacts of LD clauses based on the Likert scale of five ordinal measures of degree towards each statement (from 1 to 5). The scale no representation follows, 5-Strongly agree 4-Agree 3 - N/A 2 Disagree 1 - Strongly Disagree and 5-More Affected 4-Affected 3 - N/A 2 - Merely Affected 1 - Least affected. Finally selecting valid and complete responses, the collected questionnaires were analyzed using Excel software.

3.3 Study Population and Sample Size

The research was conducted in Mizan Aman building construction projects implemented by SME that were selected by considering inclusion criteria (i.e. currently active projects delayed and implemented less than one annual year) and exclusion criteria (i.e. those projects at least one year and above since actively started) as well as projects which incurred delay. In this study, populations of thirty five (35) different projects were selected. All projects were used in the study and the respondents were SME members and Client supervisors/counterpart in these projects. The clients used for the study composed of Mizan Aman town municipality and Mizan Tepi university project office. The SME included were firms that have a valid registration certificate. They participated in responding to the questionnaire that covers assessing the practice of liquidated damage on project done by SME.

3.4 Sampling Procedure

Sampling can be defined as the process of selecting representative units of a population for the study in research investigation. The objective of the sampling is to provide a practical means of enabling the data collection and processing the components of the research to be carried out with ensuring that the sample provides a good representation of the population. For the purpose of this thesis, Purposive sampling of these organizations was made and copies of the questionnaire were distributed to the selected firms of SME members and client counterpart.

3.5 Data collection process

Data for this research was collected through a questionnaire survey, interview and desk study targeting construction professionals practicing with construction client supervisor (Mizan-Aman Town administration and Mizan Tepi University) and SMEs, in Mizan-Aman Town. The data collection process through the close ended questionnaires was used because close ended questionnaires are often easier and quicker for the researcher to record and code the responses obtained from the respondents and it is also easier for the respondents to fill (tick) the responses. Limited number of open-ended questionnaires was also included to allow respondents to give additional information, including feelings, attitudes and understanding of the subject and enable respondents to raise new issues. The questionnaire has been divided into four sections where section I contains questions related to the general particulars of the respondents background of the individual and organization completing the questionnaires such as professions or job title they belong, educational qualification, area of specialization in construction sector and other descriptive data. Section II raises questions related to awareness of stake holder on enforcement of liquidated damage. A Section III contains questions related to the problems in enforcing LD clauses in relation to SMEs. The last sections contain questions related to impacts of LD clauses on construction project in relation to SMEs.

Personal interviews were also carried out to get more information in greater depth, to get personal information easily from the respondents and to increase the accuracy and reliability of the information obtained through questionnaire. The interview question undertaken for this thesis was based on semi- structured style (generalized form of questionnaire) with a flexible order depending on what the interviewer perceives the subject matter by looking at the respondent capability and exposure or experience. The interview for this thesis was made with four persons from client supervisors' side and six of them are from SMEs sides.

Desk studies on some selected topics were used in this research to support or supplement responses and arguments found by questionnaire and interview through in depth analysis of some cases of a project.

Generally, questionnaire in the form of both open and closed ended questions, personal interview and Archival documents/desk study were used to collect the data.

3.6 Data analysis and presenting

Data collection and organizing are both in terms of numbers (quantitative) and words (qualitative). After summarizing the data according to objectives, the numerical portion of the data was analyzed by Relative Importance Index, Cronbach's coefficient alpha, Spearman's-rank correlation coefficient, and P-value using Excel software and qualitative data was analyzed by Simple percentage. Microsoft excel in analyzing all the data obtained from the questionnaires were used. After the data was analyzed, it was presented by using frequency distribution table, bar graph and pie chart.

Relative importance index (RII)

It was used to calculate the relative importance of the factors that were rated by the respondents to determine the relative importance of the problem enforcing to implement LD and impacts of LD clauses in construction projects identified by the literature survey. (Kometa et al., 2017) and (Sambasivan and Soon, 2007) used the RII method to determine the relative importance of the various causes. RII is given by

$$x = \frac{\sum W}{A * N} = \frac{5 * n5 + 4 * n4 + 3 * n3 + 2 * n2 + 1 * n1}{5 * N}$$

Where W =weighting given to each variable by the respondents

A = the highest weight (i.e., A= 5 in this case)

N =is the total number of respondents. (i.e 86 in this research).

5-Strongly Agree 4 – Agree 3 – N/A 2- Disagree 1 – Strongly Disagree

n5 = is number of respondents for strongly agree, n4 = is number of respondents for agree, n3 = is number of respondents for N/A, n2 = is number of respondents for disagree, n1 = number of respondents for strongly disagree.

A high RII indicates high impact or importance and vice versa.

Cronbach's coefficient alpha

It is designed as a measure of internal consistency. The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0. The closer the Alpha is to 1, the greater the internal consistency of items is assumed. The formula that determines alpha is simple and makes use of the items (variables), k, in the scale and the average of the inter-item correlations.

$$\alpha = \frac{Kr}{1+(K-1)r}$$

Where: α = Cronbach's coefficient

k = Number of items (variables).

r = the average of the inter-item correlations.

A rule of thumb that applies to most situations is:

0.9 Up to 1.0 Excellent	0.6 Up to 0.7 Questionable
0.8 Up to 0.9 Good	0.5 Up to 0.6 Poor
0.7 Up to 0.8 Acceptable	0.0 Up to 0.5 Unacceptable

Spearman rank correlation coefficient

It is a non-parametric test. Non-parametric tests are also referred to as distribution-free tests. (Sambasivan and Soon, 2007) followed this approach and Spearman's rank correlation coefficient (r_s) is a reliable and fairly simple method of testing both the strength and direction (positive or negative) of any correlation between two variables. The Spearman rank correlation coefficient is calculated using the Equation:

$$r_s = 1 - \frac{6 \sum d^2}{(N^3 - N)}$$

Where: r_s = Spearman rank correlation coefficient.

d = difference in ranking between the two correspondents; contractor and consultant or contractor and client or client and consultant.

N = the number of variables.

To label the strength of the correlation or association, for absolute values of r,

$r_s = 0-0.19$ is very weak, $r_s = 0.2-0.39$ is weak, $r_s = 0.40-0.59$ is moderate, $r_s = 0.6-0.79$ is strong and $r_s = 0.8-1$ is very strong correlation.

Testing the significance of r_s

The significant relationship of correlation between the rankings of responsible construction parties was tested using the computed Spearman rank correlation coefficient and the critical spearman rho (ρ) estimated using the number of variables and level of significance. The calculated from a sample of data is an estimate of ρ , the Spearman rank correlation coefficient that would be obtained from the entire population of data from which the sample was collected. A common desire in rank correlation analysis is to test the null hypothesis that there is no correlation in the population between the paired ranks. The significance was tested using the value of the Spearman's rho coefficient (r_s) that was calculated as test statistics and refer the critical value from the table according to the specified significance level.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1 General

The finding is the result of both primary and secondary data sources. The primary data were from the questionnaires, and interview. The secondary data were collected from Mizan Aman small and micro enterprise office desk studies. In each sub-topic of the analysis, it is mentioned where the data were computed. The data presentation and analysis are grouped into three sections in line with the objectives. These are:-

- i) Assessment on awareness of stake holders on enforcement of liquidated damage (LD)
- ii) Problems in practicing liquidated damage clauses
- iii) Impacts of liquidated damage in construction parties in relation to SMEs

4.2 Questionnaire response rate

A semi-structured questionnaire was prepared and distributed to the major parties that play dominant role in small and micro enterprise construction activities. These are clients' counterparts and the SMEs/contractors. Before starting the analysis, the returned questionnaires were checked for their reliability and the data were cleared to make questionnaires suitable for data analysis.

A total of 105 questionnaires were distributed: 35 for client counterpart and 70 for Contractors/SMEs and from the distributed questionnaire 82% were returned. In addition, ten reputed professionals of the sector (six from SME/contractors and four from client counterpart), who have strong expertise and interests with regard to the clauses of LD focus, have been interviewed and their responses have been supplemented with the questionnaire survey.

Table 4.1 Questionnaire Response rate

Participants	Distributed number	Returned number	Returned%
SME	70	56	80
Client counterpart	35	30	86
Total	105	86	82

It is evident from the table 4.1 above shows the number of questionnaires distributed, returned and their percentage response rate. These questionnaires were filled by SME members and client counterpart. 86 questionnaires were returned (82%) and among the returned the valid was as follows: 30(86% of returned) from client counterpart that have the highest percentage followed by SMEs 56(80%) and 86(82%) totals.

4.3 Background of Respondents

4.3.1 Position/profession of the respondents

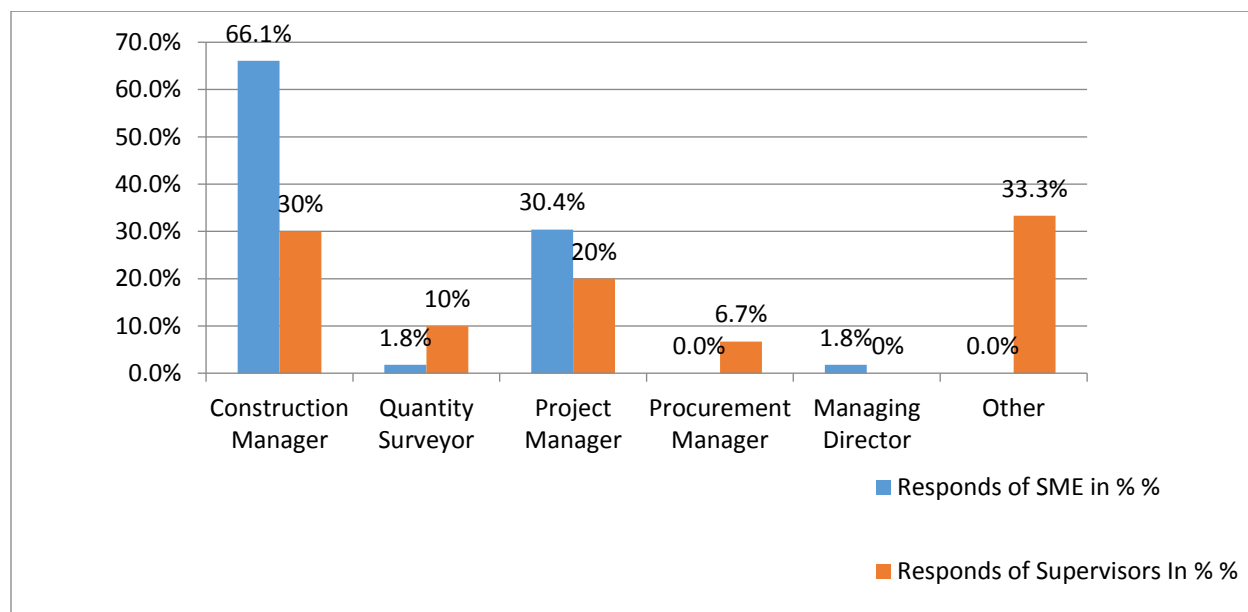


Figure 4.1 Position/profession of the respondents in their firm/organization

From the above figure 4.1 among the 56 participants of the study from SME group 66.1% (37) were construction manager in the enterprise, 17(30.4%) said their role in their firm was project manager and only 1(1.8%) person from quantity surveyor were participated. From the 30 participants of the study from client counterpart group 9(30%) were construction manager in the sector, 6(20%) said their role in their sector was project manager, 2(6.70%) were procurement manager in the sector and only 3(10%) person from quantity surveyor were participated. But the others 10(33.3%) of the respondents said the role in their sector were others listed from the above.

4.3.2 Education back ground of the respondents

Education can be related to the process of information flow that enables the enterprise to be creative and produce different designs to be competitive within the market. This can further enable them to operate the tasks actively and increase productivity of the enterprises. Professionals directly involved in construction activities were considered for questionnaire survey. A scholar like a Mincer argued that practical on the job training is nearly as important as educations (Mincer, 1962). Regarding in Ethiopia, there is Technical and Vocational Education and Training (TVET) that provides trainees with the technical skills applicable to the particular skill. Tables 4.2 illustrate respondents’ educational qualification.

Table 4.2 Educational Background of the respondents

Educational Title	SME		Client counterpart		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
TVET advanced diploma	33	58.9	3	10	36	41.8
BSc	21	37.5	25	83.3	46	53.5
MSc	2	3.6	2	6.7	4	4.7
PhD	0	0	0	0	0	0
Others	0	0	0	0	0	0
Total	56	10	30	10	86	100

From the above table 4.2 among the SME participants majority of the staffs 58.9% has advanced diploma from TVET followed by 37.5% Bachelor of Science and only 3.6 % of the respondent were MSc holders. On the other hand, from the client counterpart 83.3% of the participant has BSc holder whereas 10% and 6.7% has TVET advanced diploma and MSc qualification holders respectively. From the total of the respondents all of them are advanced diploma and above holders and they can well understand the all question to give the valid answer for distributed questionnaires.

4.3.3 Area of specialization in construction and experiences of respondents

The SMEs/ contractors were further asked the specialization/ construction sector on which their company has established. The following figure 4.2 shows the percentage of specialization area of SME.

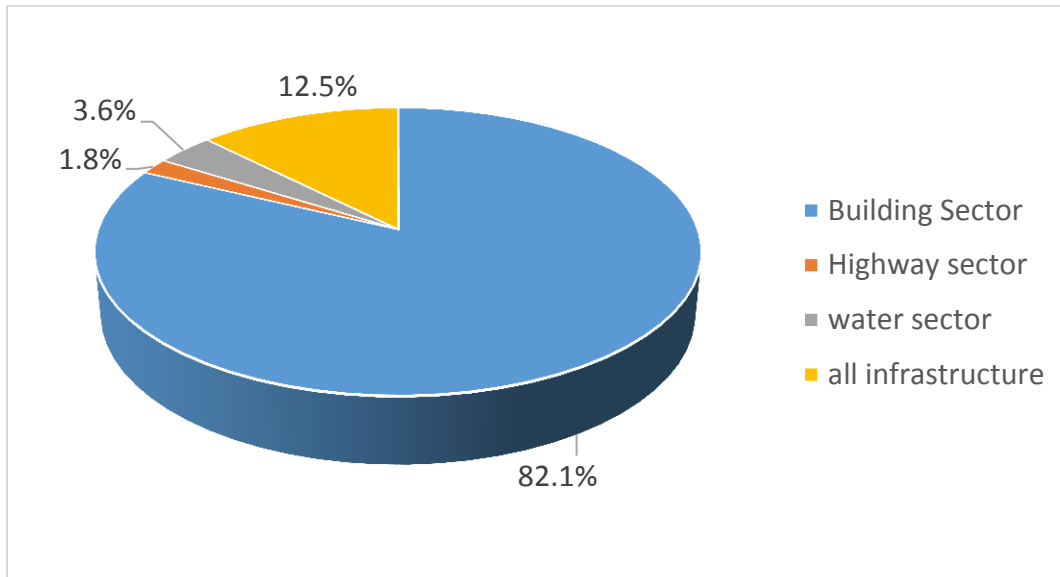


Figure 4.2 Percentage of SMEs' specialization area

Among the respondents 82% were building sector followed by all infrastructure and water sector which is 12.5% and 3.6% respectively. Other small amount of SME 1.8% said highway sector.

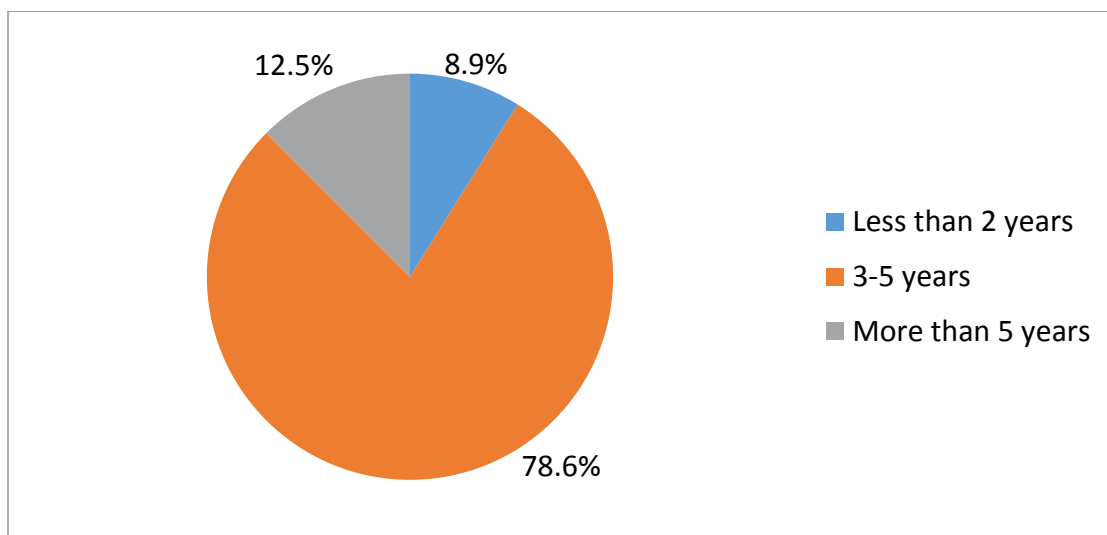


Figure 4.3 Experience of SMEs' since establishment

With regard to the experience the Small and micro enterprises experience, majority of the enterprises have an experience of 3-5 years which is 78.6% and those with experience more than 5 years and less than 2 years are 12.5% and 8.9% respectively. This shows that most of the SME workers have adequate experience in the construction industry, they have worked on the various building types and therefore capable of providing the necessary information needed for the research work.

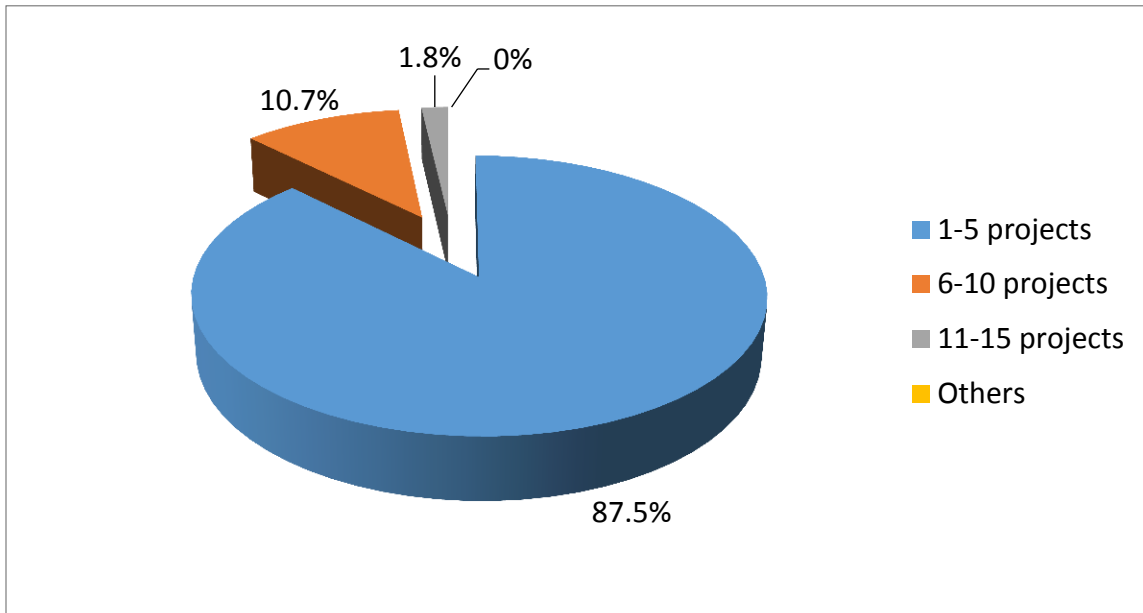


Figure 4.4 Number of Projects executed by SME since the establishment

On this study 56 SME has participated and from this 87.5% has won from 1-5 projects since their establishment. Only 10.6% took 6-10 projects this number shows that participant has a good understanding of LD clause and the contract since all of them at least once have worked on a project.

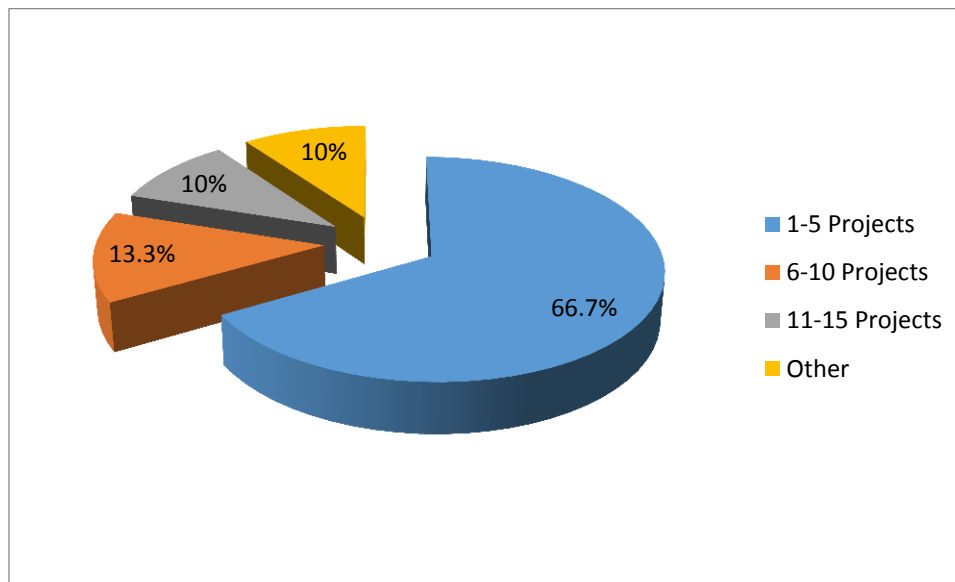


Figure 4.5 Number of Projects supervised by supervisor/client counterpart

The client counterpart also asked how many projects they have supervised as a client counterpart and 20 (66.7%) have supervised 1-5 projects, 4 (13%) have supervised 6-10 projects and only 3 supervisors’ supervised 11-15 projects. The other 3(10%) of the respondents supervised other than the above-stated numbers.

Table 4.3 Number of project completed beyond anticipated date.

No of projects	SME		Client counterpart		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
None of the projects	18	32.1	13	43.3	31	36
1-5 projects	36	64.3	13	43.3	49	57
6-10 projects	2	3.6	3	10	5	5.8
Other	0	0	1	3.3	1	1.2
Total	56	100	30	100	86	100

The participants also asked that how many projects completed beyond the anticipated completion date. From the participants 64.3% of SMEs and 43.3% of client counterpart answered that 1-5 projects were completed beyond the anticipated date and 32.1% of SMEs and 43.3% of client counterpart respondents answered that none of the projects were completed beyond the

anticipated date. This shows that there was extension of time or LD or any action taken by the stake holder.

4.4 Analysis on Awareness level of stake holders on LD practice

On this analysis the respondents asked what are the awareness they have regarding to LD. This includes the form of the contract they uses, method of LD assessment, EOT and factor taken in to account in calculation of LD and who guaranteed for assessment of LD and EOT.

4.4.1 Form of contract the firm/organization uses

Condition of contract is one of the main integral parts of contract document in construction contracts. MoWUD condition of contract are important local condition of contract and the current one is valid 1994 such condition of contract is highly resembled from FIDICs condition of contract and it applies for civil engineering works. The PPA condition of contract is a recent one; this has been issued in August 2011 and applicable to all possible sorts of public (federal) procurement.

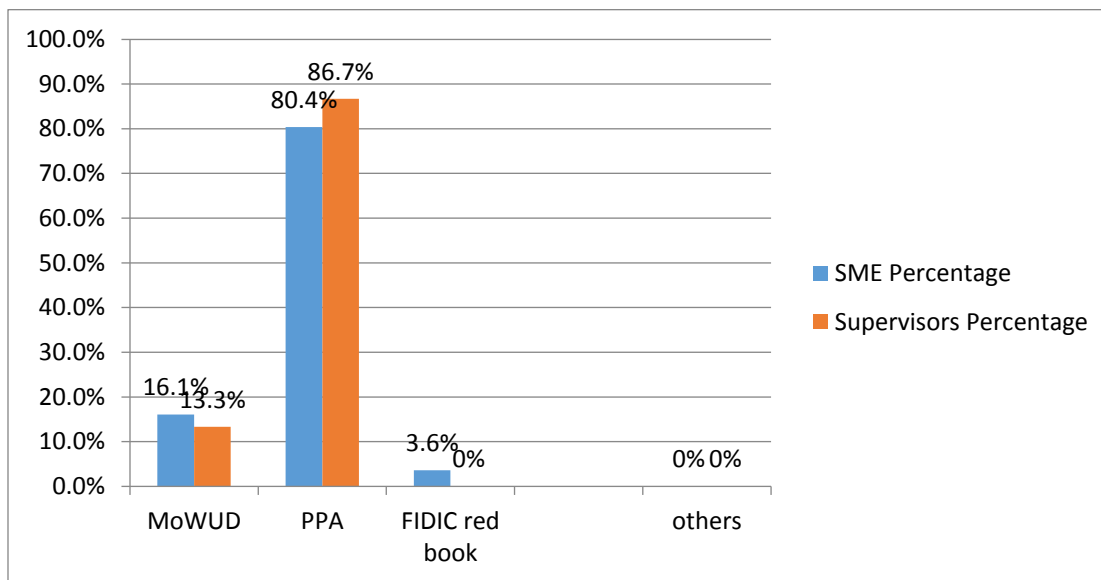


Figure 4.6 Applicable form Contract firm/organization uses

PPA contract form is a condition of contract that is widely used; the answer of participant also shows this fact. From both categories the highest percentage shows that PPA contract form is mainly used by their firm. 80.4 % of respondents from SMEs and 87.7% client counterpart respondents said the contract form of their firm or organization uses was PPA contact form and

only 16.1% of SMEs respondents and 13.3% of client counterpart respondents said the contract form of their firm or organization uses was MoWUD. From the total, 82.6% of the respondents said PPA form of contract is used in their contract.

4.4.2 Analysis on General awareness level of respondent regarding to LD

This part of the questionnaire required respondents’ general perception of LD in construction contracts. The first question was about the significance of LD and it was assessed by asking respondents directly whether they believe it is necessary to include LDs in contract is relevant or not. Respondents from client side/supervisors generally confirmed that it is necessary to include Liquidated damage clause in the contract.

Table 4.4 Is it necessary to include LD provision in the contract?

Is it necessary to include LD provision in the contract?	SME		Client counterpart		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Always	48	85.7	28	93.3	76	88.38
Sometimes	7	12.5	2	6.7	9	10.46
Never	1	1.8	0	0	1	1.16
Total	56	100	30	100	86	100

From the above table 4.4 that 93.3% client counterpart respondent’s said it should always be included and 85.7% of the SME agreed to the provision of LD clause. Small amount of the respondents 12.5% of SME and 6.7% of client counterpart said that sometimes it is necessary to include LD provision in contracts. 88.38% of the total respondents agreed that it is necessary to include LD provision in the contract.

Table 4.5 Is it LD clause provision in the contract they charged?

Is it LD clause provision in the contract they charged?	SME		Client counterpart		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Always	41	73.2	23	76.6	64	74.42
Sometimes	14	25	5	16.7	19	22.09
Never	1	1.8	2	6.7	3	3.49
Total	56	100	30	100	86	100

On the other hand, the respondents asked whether LD clauses provisions in their contract they have under taken and majority of the participant, 73.2% SME and 76.6% client counterpart also indicated that the LD clause is always part of contracts they are in charge. 25% of SME and 16.7% client counterpart respondents said the LD clause is sometimes part of contracts they are in charge and small amount of respondents 1.8% SME and 6.7% client counterpart said never part of their contract. This shows that there is a gap when the contract signed to include LD clauses.

4.4.3 Reasonable Range of LD amount

LD amounts specified in construction contracts must also not be disproportionate as to over compensate, profit, or unjustly enrich the injured party (Thomas et al, 1995) High LD amounts compared with the likely damages may also be considered a penalty and render the clause unenforceable. Low LD amounts on the other hand, also do not fully compensate clients for delays (Thomas et al., 1995). LD amounts must therefore be reasonable and consistent with the cost an owner is likely to incur in the event of late completion (Carty, 1995), and the courts will enforce LAD provisions when they are fair and reasonable estimates of anticipated losses and delays considered inexcusable. As given on different studies determination of LD amount needs an attention in order not to be over or under estimated. The participants also asked the reasonable range of LD they select.

Table 4.6 Reasonable Range of LD amount

Reasonable range of LD amount	SME		Client counterpart		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
0-5% per total cost	12	21.4	6	20	18	20.9
5%-7% per total cost	1	1.8	4	13.3	5	5.8
7%-10% per total cost	43	76.8	19	63.3	62	72.1
Other	0	0	1	3.3	1	1.2
Total	56	100	30	100	86	100

From the above table 4.6 the respondents was asked that the range of LD that is acceptable and the highest percentage, 76.8% and 63.3% of the SME and client counterpart respectively illustrates 7%-10% per total cost is acceptable. The other 21.4 % and 20% of the SME and client counterpart respectively answered 0%-5% per total cost is acceptable.

Additional the respondents requested to answer the responsible party for the assessment of the LD amount. The survey revealed that clients are usually responsible for the assessment and determination of LD amounts.

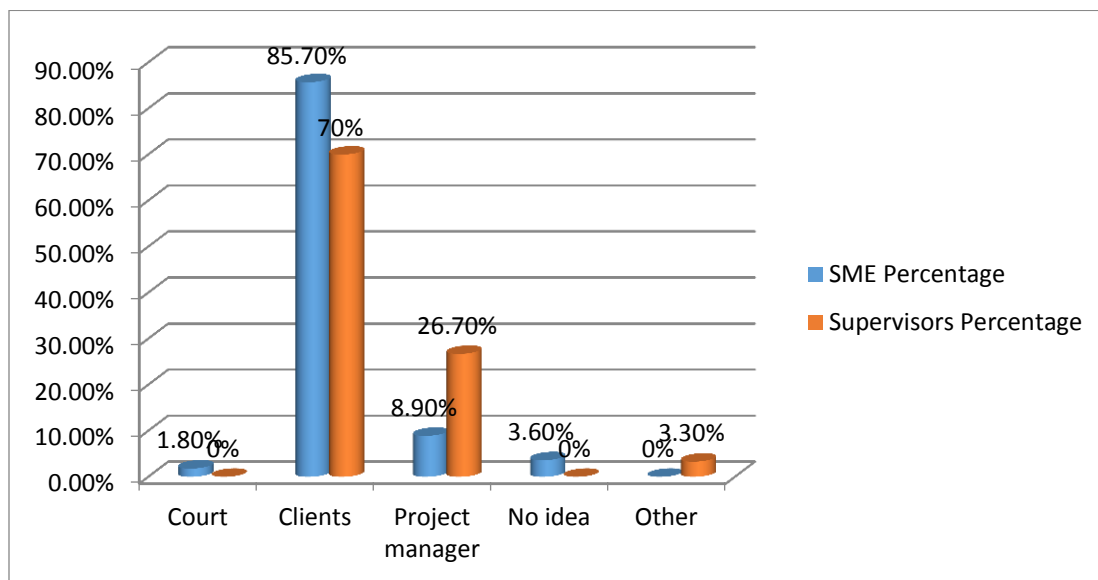


Figure 4.7 Who is responsible for assessment of LD?

For the above figure 4.7 the majority of respondents 85.7% of SMEs and 70% of client counterparts answered that client is responsible for determination of LD amount. The other respondents 8.9% SMEs and 26.7% of client counterparts said assessment of LD is the responsibility of project manager. 80.2% of respondents agreed that client is responsible for assessment of LD.

4.4.4 Analysis on Awareness of stake holders regarding to EOT and completion date

Delays, which are the major cause of claims, may occur due to unforeseen site condition; increase in scope of work and others therefore evaluating extension of time is a major task in construction projects as it directly affects the cost and completion date of the project. The result of the responses also shows that almost in all of the construction contracts the respondents' involved EOT clause was provided. According to PPA general condition of contract clause 73, the contractors may request an extension of an intended completion date if he is or will be delayed in completing the contract 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 fulfil 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.

Table 4.7 EOT provision in their contract document

EOT clauses provisions in their contract	SME		Client counterparties		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Yes	53	94.6	28	93.3	81	94.2
No	3	5.4	2	6.7	5	5.8
Total	56	100	30	100	86	100

From the above table 4.7 the respondents asked whether EOT clauses provisions in their contract and the majority of respondents 94.6% of SMEs and 93.3% of client counterparties answered there was EOT on their contracts. This shows that the respondents have full awareness regarding to EOT in their contract.

Table 4.8 Project delay caused by client

what will happen if the client caused the delay of project	SME		Client counterpart		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Entitle to EOT	35	62.5	22	73.3	57	66.3
Free from LDs clause	17	30.4	8	26.7	25	29.1
No action will be taken	4	7.1	0	0	4	4.6
Total	56	100	30	100	86	100

The participants were asked what will happen if the client caused the delay of project and 62.5% from SME and 73.3% client counterparties' answers shows that the project will be entitled to EOT if the delay is caused by the owner of the project. This supports the clause given under the causes for the provision of EOT. The rest 30.4% SME and 26.7% client counterparties believes that if the project is delayed because of the client, it will be free from liquidated damage clause, because

liquidated damage is applied if the Contractor fails to carry out any or all of the Works within the period specified in the Contract.

4.4.5 Who is granted for EOT?

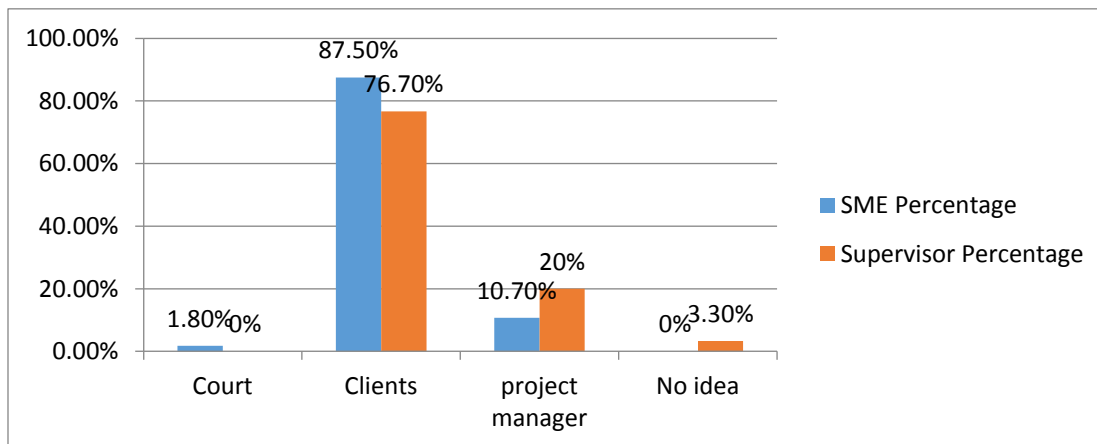


Figure 4.8 who is granted for EOT

The participants also asked that who is granted for EOT in their contract and the majority of respondents 87.5% of SMEs and 76.7% of client counterparts answered that client is granted for EOT. The other respondents 10.7% SMEs and 20% of client counterparts said project manager is granted of EOT in the project of their contract.

4.4.6 Analysis on Awareness of Factor taken into account in the calculation of LD

Factors for calculating LAD amounts will differ for a number of reasons will depend on the client type, the function of project and loses in profit and rental. The responses also show that the factors are mainly depended on losses in profit and function of project which is followed by client type. Also some respondents said loss of interest is factor taken into account in the calculation of LD. The results are summarized in Table 4.9.

Table 4.9 Factors taken to calculate LD

Factor taken to calculate LD	SME		Client counterpart		Total	
	Frequen cy	Percent age	Frequen cy	Percent age	Frequen cy	Percent age
Client type	7	12.5	3	10	10	11.6
Function of the project	20	35.7	10	33.3	30	34.9

Loses in profit and rental	26	46.4	13	43.3	39	45.3
Others	3	5.4	4	13.3	7	8.2
Total	56	100	30	100	86	100

From this table 4.9 the respondents answered that to calculate LD amount 46.4% from SME and 43.3% client counterparts answers shows that loses of profit and rental is one of the factor and 35.7% from SME and 33.3% client counterparts answers shows that function of the project is one of the other factor. 12.5% from SME and 10% supervisors' answers also said client type is the factor take to calculate LD amount. The rest 5.4% SME and 13.3% client counterparts believe that the others factors will take to calculate LD amount.

4.4.7 Contestation on the practice of LD clauses

On the question of whether the practice of LDs clauses has ever been contested or not, the question for professionals in client and consultant organizations. For this question from the total the majority of respondents have contested the practice of LD clauses.

Table 4.10 Contestation on the practice of LD clauses

Have you ever contested the practice of LD clauses?	SME		Client counterpart		Total	
	Frequen cy	Percent age	Frequen cy	Percent age	Frequen cy	Percent age
Yes	38	67.9	19	63.3	57	66.3
No	18	32.1	11	36.7	29	33.7
Total	56	100	30	100	86	100

From the above table 4.10 that 32.1% of SMEs respondents and 36.7% of client counterpart respondents said they are not contested the practice of LD clauses. But the majority of the respondents 67.9% of SMEs respondents and 63.3% of client counterpart' and 66.3% the total respondents answered they have been contested. From this question the respondents asked to explain why they are contested and they answered that because of

- The delay problem is happen due to the client for instance payment of the contractor is not paid on time and natural cases
- There are different cases which are not considered by client. For example weather condition and other natural cases

- The project is not started on time because right of way, natural condition, access road etc.so the client must be consider the factors before the application of LD
- LD is not used for the profit of client and also affects the contractor profit and go to losses. So enough time must be given by client to complete the project.
- The client must be considering all factors before they give or estimate the completion period of the project.
- Since the delays are sometimes beyond the capacity of the contractor like material shortage on market etc.
- LD is assumed to be the compensation for the losses of the clients’ time to use the project and the serviceability of the project on specified time it must be considered

A construction delay is anything that hinders the ability of a contractor to meet the schedule as the as per the contract. So different actions will be taken to the delayed projects by the client based on the contract agreement. The participants were asked what action did their firm took to the delayed project and answers revealed that LD clause in contract document will be applied. The following table 4.18 illustrated the action taken by client.

Table 4.11 Action taken by client

Action taken by client	SME		Client counterpart		Total	
	Frequenc y	Percenta ge	Frequenc y	Percenta ge	Frequenc y	Percent age
No action taken	3	5.4	0	0	3	3.5
Validation of delay by granting extension	4	7.1	3	10	7	8.1
Application of LD clause in contract document	46	82.1	17	56.7	63	73.3
Determination/termination of contract	3	5.4	10	33.3	13	15.1
Total	56	100	30	100	86	100

From this table 4.11 that 82.1% from SME and 56.7% client counterpart answers shows LD clauses in contract is applied and 5.4% from SME and 33.3% client counterpart answers shows that termination of contract is applied. 7.1% from SME and 10% client counterpart answers also

said validation of delay by granting EOT. From the above result action taken by client is different for project delayed.

The respondents also asked that what were their justification for the client to take the above action and the answered the following.

- Without any justification they only apply LD clauses on contractual agreement.
- If the executed project is not completed on time action will be taken according to contractual agreement if there is excess delay.
- In the case project cost and the contract amount was comparative vary the SME was difficult to complete the project the client must take action.
- Due to unregistered or unreported whether condition like heavy rainy case and due to carelessness of SME and if they do not work as per contractual agreement.
- Excess delay of the project that have no justified time extension and if the project is not completed even after project time extension
- If the contractors are not on site and absence from site for long time.
- If the LD is above or exceeded 10% of the contract amount the client will terminate the project.
- Because of the SME fails to carry out the work in specified period
- If they fails to provide the letter of guarantee from the concerned body.
- Due to the quality of material and works the client will take action by terminate the project

4.4.8 Analysis on Assessment method employed in quantifying LD

There are many different methods of assessment of LD at different level of organization. From these methods the most famous are the followings.

1. Use of LD amount from previous contracts

Use of LD amount from the previous contract is one of the assessment method employed in quantifying of LD amount. This shows the organization take amount of LD from other previous done contracts to assess LD amount for new project contacts.

2. Rule of thumb/guesses from experience

Rule of thumb or guesses from experiences is also the other assessment method employed in quantifying LD amount. This method is easily applied procedure or standards based on actual experiences to quantify the LD amount by considering the all factors.

3. Percentage of contract sum

The other method of the assessment method employed in quantifying LD is some amount of percent from the total amount of contract sum. According to PPA 2011 contract form, GCC Clause 18 if the Contractor fails to carry out any or all of the Works within the period specified in the Contract, the Public Body may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages 0.1% or 1/1000 of the value of undelivered Service for each day and the cumulative penalty to be paid by the Contractor shall not exceed 10% of the contract sum. If the LD exceed 10% contract sum, the Public Body may terminate the contract.

4. SCQSLG method/first principle calculation

The Society of Chief Quantity Surveyors in Local Government (SCQSLG, 1993) investigate the procedures adopted for the assessment of LADs on local authority contracts in the UK and summarized the precedent set by the courts for a valid assessment of damages as follows:

- If the parties make a genuine attempt to pre-estimate the loss likely to be suffered, the sum stated will be liquidated damages and not a penalty, irrespective of actual loss.
- The sum will be a penalty if the amount is extravagant having regard to the greatest possible loss that could be caused by the breach.

According to, the SCQSLG report highlighted the difficulty in the assessment of LAD amounts and concluded that only the loss of interest on cost of contract work can be genuinely pre-estimated to a high degree of certainty. The calculated LAD amount should then be expressed as a weekly or daily figure for the entire contract.

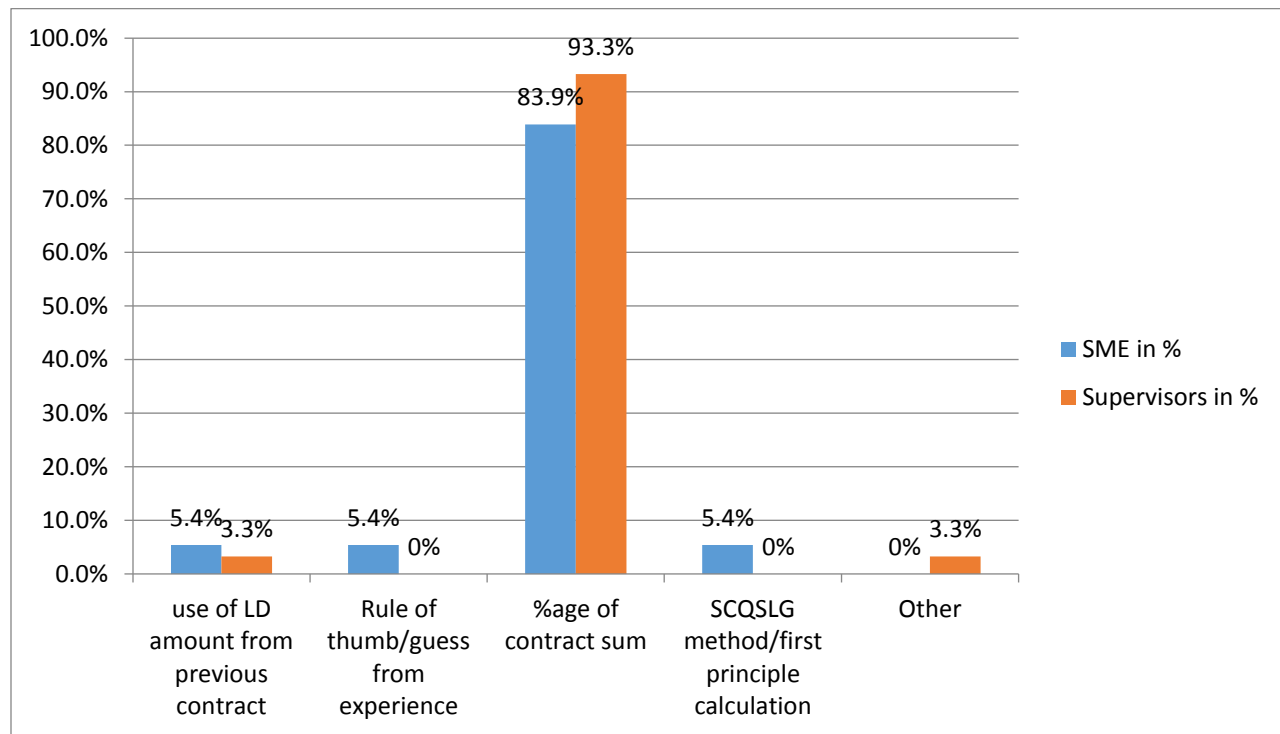


Figure 4.9 The assessment methods employed in quantifying LD amount.

The respondents asked to answer the methods of assessment of LD are used in their firm or organization. Methods of assessing LD amounts which were often employed by the respondents are use of LD amount from previous contract, rule of thumb and percentage of contract sum among these percentage of contract sum is the most widely used method. From their responds 83.9% of SMEs and 93.3% of client counterpart said the most assessment method for LD in their firm or organization is percentage of the contract sum. On the others hand the 5.4% of the SMEs respondents answered for each methods that use of LD from previous contract, Rule of thumb/guess from experience and SCQSLG/first principle calculation were also used in their firm. But from the supervisor respondents answered that were not used rule of thumb/guess from experience and the SCQSLG method/first principle calculation as assessment method of LD in their organization and only 3.3% respondents said the use of LD from previous contract was also used as assessment method in their firm. From the result of this study, it can be concluded that percentage of contract sum is the most preferable method to determine LD amount.

4.5 Analysis of Problems in practicing LD clauses in relation to SMEs

On this objective of research the respondents asked the problems in practicing LD clauses in relation to SME. The respondents asked that which of the following factors and situation prevent the application of Liquidated Damages clauses or which render LDs unenforceable and they answered the question of the following variables in table least affect, merely affect, NA, affected and more affected. The analysis is done by RII and ranked as follows.

Table 4.12 Problems in practicing LD clause

Problem in practicing LD clauses	SME		Counterpart		Weighted	
	RII	Rank	RII	Rank	RII	Rank
LD are generally overlooked or ignored by sympathetic.	0.775	6	0.700	8	0.749	6
Inability of contractor to study the contract documents very well before signing	0.779	5	0.773	5	0.816	3
Payment of contractors is not paid on time	0.843	1	0.787	1	0.823	1
Untimely payment of executed additional work for contractors.	0.807	4	0.747	6	0.786	4
Undetailed work study at the initial stage	0.843	1	0.787	1	0.823	1
LD amount not genuine pre-estimate of the loss	0.454	10	0.387	10	0.430	10
Lapses in contract administration practices	0.725	8	0.787	1	0.747	7
Lack of Awareness regarding to LD	0.711	9	0.640	9	0.619	9
Fear of risk their future work relation with employment	0.736	7	0.720	7	0.730	8
Fear the prolonged justice process	0.825	3	0.787	1	0.765	5

From the above table 4.12 Problems in practicing LD clauses are given a rank based on the responses from the participant, thus, payment of contractor not paid on time and undetailed work study at initial stage of the project rook the first place with RII value of 0.843 from SME. Fear the prolonged justice process (RII=0.825) and Untimely payment of executed additional work for

contractors (RII=0.807) becomes the second and the third issue. Inability of contractor to study the contract document before signing (RII=0.779) and LD generally overlooked or ignored by sympathetic (RII=0.775) placed on the fourth and fifth stage of the problem respectively. Fear of risk their future work relation with employment (RII=0.736) and Lapses in contract administration practices (RII=0.725) is another the sixth and seventh problem mentioned by SME. Lack of Awareness regarding to LD and LD amount not genuine pre-estimate of loss is the last eighth and ninth problem mentioned by SME respectively. From the client counterpart perspective Payment of contractor not paid on time, Lapses in contract administration practices, undetailed work study at initial stage and Fear the prolonged justice process is still the main problems given the highest importance and has the same value of (RII=0.787). Inability of contractor to study the contract document before signing (RII=0.773), untimely payment of executed additional work for contractors (RII=0.747), Fear of risk their future work relation with employment (RII=0.720), LD are generally over looked or ignored by sympathetic (RII=0.700). Lack of Awareness regarding to LD and LD amount not genuine pre-estimate of loss is the last problem responded by client counterpart for enforcement of LD clauses. From the given result it can be concluded that for problems in practicing LD clause perceived by both are the same and there is a visible relation between Payment of contractor not paid on time, undetailed work study at initial stage, Inability of contractor to study the contract document before signing and Untimely payment of executed additional work for contractors.

Reliability Checking - Cronbach's Alpha

The reliability of the data was analyzed by using excel to run the value of Cronbach's alpha and the results for the SMEs and Supervisors are as shown below.

Table 4.13 Cronbach's coefficient result for problem of practicing LD clauses

K	10
$\sum \text{var}$	9.771
Var 2	42.622
Cronbach's α	0.856

The Cronbach's α value is 0.856 it is between 0.8 - 0.9 and this value indicates that it is good reliability.

Correlation Checking - Spearman's rank correlation coefficient

To test the degree of agreement between the two groups of respondents as to the problem of enforcing LD, a correlation analysis using Spearman's rank correlation coefficient was done. A high correlation indicates that there is a high degree of agreement between the respondents. The relation between SMEs v_s. client counterpart is 0.727, which is a strong agreement.

Table 4.14 Spearman's rank correlation coefficient for problem of practicing LD clauses

Construction parties	Spearman's rho value	Correlation
SMEs v _s . Client counterpart	0.727	strong

Significance Checking –Spearman rank correlation coefficient and the critical spearman rho (ρ)

The significant relationship of correlation between the rankings of two parties was tested using the computed Spearman rank correlation coefficient and the critical spearman rho (ρ), thus to check the significance we have to refer to appendixes B to get the critical r-value (r_{crit} or r_s). If the critical value from the table is less than the calculated correlation coefficients the result is significant. The value of r_{crit} or r_s is also calculated by $N= 10$ and $p= 0.05$ r_s value is 0.648. So, in our cases, the r_s is less than the correlation coefficient ($0.648 < 0.727$) and it is significant.

4.6 Analysis on Impacts of LD clauses in construction parties

The questionnaire was analyzed from the perspective of SMEs and client counterpart to identify how liquidated damage clauses impacts in construction parties. The RII was computed for each to identify the most significant factors. The causes then discussed based on the RII classification class. From the RII value, nearest to 1.0 is the most critical level of preference and being the most important implication as the results.

Table 4.15 Impacts of LD clauses in construction parties

Impacts of LD clauses in construction parties	SME		Counterpart		Weighted	
	RII	Rank	RII	Rank	RII	Rank
Award process resulted in additional cost and concerns	0.65	5	0.59	8	0.63	6
Misleading understandings incurred costs in prolonged acceptance	0.64	6	0.65	5	0.64	5
Having enforced to LD causes additional cost	0.64	6	0.55	9	0.61	8
Having being subjected to effectiveness of contract agreement articles is benefit all parties	0.74	4	0.77	2	0.75	4
LD related cost reduces work initiation	0.43	11	0.42	10	0.42	11
LD related cost reduces job satisfaction among employees	0.46	10	0.41	11	0.44	10
The enforcement of LD reduces the number of conflicts	0.59	9	0.63	6	0.59	9
The mere presence of enforcement of LD during construction may influence the attitude to construction industry	0.63	8	0.62	7	0.62	7
Having enforcement of LD in the contract indicates the openness of the owner to apply the LD without resorting to arbitration/litigation thereby contributing to the satisfaction of contracting parties	0.80	3	0.73	4	0.78	3
The contractual LD provision indicates the owner's willingness to submit in timely manner	0.83	2	0.77	2	0.80	2
The LD is accepted as procedure that provides the parties positive, cost effective and time sensitive solution to provide win-win solution to contracting parties	0.85	1	0.83	1	0.84	1

From 11 groups of how liquidated damage clauses impacts in construction parties categories, that based on the level of criticality in class 5 which classified as most critical factor as perceived by client counterparts, the most critical factor found to be the LD is accepted as procedure that provides the parties positive, cost effective and time sensitive solution to provide a win-win solution to contracting parties (RII=0.83), Being subjected to effective contract agreement article is a benefit to all parties and The contractual LD provision indicates the owners willingness to submit in timely manner (RII=0.77), Having enforcement of LD in the contract indicates openness of the owner to apply LD without resorting to arbitration there by contributing to the satisfaction of contracting parties (RII=0.73), Misleading understandings incurred costs in prolonged acceptance (RII=0.65), The enforcement of LD reduces number of conflicts (RII=0.63), The mere presence of enforcement of LD during construction may influence the attitude of CI (RII=0.62), and Award Process resulted in additional cost and concerns (RII=0.59). Similarly, the LD is accepted as procedure that provides the parties positive, cost effective and time sensitive solution to provide a win-win solution to contracting parties was the most important implication based on the perception of SME s with (RII=0.85) followed by The contractual LD provision indicates the owners willingness to submit in timely manner (RII=0.83) and Having enforcement of LD in the contract indicates openness of the owner to apply LD without resorting to arbitration thereby contributing to the satisfaction of contracting parties (RII=0.80).

From the above discussion, the impacts of LD clauses in construction parties perceived by SMEs and counterparts are almost the same, the LD is accepted as procedure that provides the parties positive, cost effective and time sensitive solution to provide a win-win solution to contracting parties, the contractual LD provision indicates the owners willingness to submit in timely manner, having enforcement of LD in the contract indicates openness of the owner to apply LD without resorting to arbitration thereby contributing to the satisfaction of contracting parties, having being subjected to effective contract agreement article is a benefit to all parties and misleading understandings incurred costs in prolonged acceptance.

Reliability Checking - Cronbach's Alpha

The reliability of the data was analyzed by using excel to run the value of Cronbach's alpha and the results for the SME and Supervisors/consultant are as shown below.

Table 4.16 Cronbach’s coefficient result for impact of LD clauses in construction parties

K	11
$\sum \text{var}$	9.816
Var 2	42.141
Cronbach’s α	0.844

The Cronbach’s α value is 0.844 it is between 0.8 - 0.9 and this value indicates that it is good reliability.

Correlation Checking - Spearman’s rank correlation coefficient

To test the degree of agreement between the two groups of respondents as to the awareness of stake holder regarding to LD clause, a correlation analysis using Spearman’s rank correlation coefficient was done. Spearman’s rank correlation coefficient (r_s) was computed for both groups of respondents; the correlation between SME and client counterpart. Table 4.17 gives the results of the analysis. The correlation between them is 0.841 and shows that there is very strong correlation between the groups of respondents.

Table 4.17 Spearman’s rank correlation coefficient for impact of LD in construction parties

Construction parties	Spearman’s rho value	Correlation
SME v.s. Client counterpart	0.841	Very strong

Significance Checking –Spearman rank correlation coefficient and the critical spearman rho (ρ)

The significant relationship of correlation between the rankings of responsible construction parties them was tested using the computed Spearman rank correlation coefficient and the critical spearman rho (ρ), thus to check the significance we have to refer to appendixes B to get the critical r-value (r_{crit} or r_s). If the critical value from the table is less than the calculated correlation coefficients the result is significant. The value of r_{crit} or r_s is also calculated by $N= 11$ and $p= 0.05$ r_s value is 0.614. So, in our cases, the r_s is less than the correlation coefficient and it is significant.

CHAPTER FIVE

CONCLUSION AND RECCOMENDATIONS

5.1 Conclusion

The awareness of stake holders regarding to liquidate damage clauses are:-

- The majority of the respondents said PPA form of contract is used in their contract and they agreed that it is necessary to include LD provision in the contract. But small amount of respondents do not have information whether LD clause included in the contracts they have undertaken. This shows that there is a gap when the contract signed to include LD clauses.
- The most respondents have awareness about LD amount and responsible body for assessment.
- The majority of respondents have respondents have full awareness regarding to EOT in there contract.
- The participants responded that if the project is caused the delay by client the project will be entitled to EOT and the client is granted for EOT. This show the participants have good information on delay cause and the responsible body.
- The action taken by client when the project is delayed are LD clauses in contract, termination of contract is applied and validation of delay by granting EOT. From the above result action taken by client is different for project delayed.
- Methods of assessing LD amounts which were often employed by the respondents are percentage of contract sum is the most preferable method to determine LD amount by SMEs in Mizan-Aman town.
- From the above conclusion the majority of the respondents have the awareness of LD clauses, EOT, delay of project, cause of delay and application of LD clauses to manage the contracts.

Problems in practicing liquidated damage clause in relation to SMEs are:-

- Payment of contractor not paid on time and Undetailed work study at initial stage of the project are the first stage

- Inability of contractor to study the contract documents very well before signing is the second stage and
- Fear the prolonged justice process is the third stage of the problem.

The impacts of liquidated damage in construction parties are:-

- LD is accepted as procedure that provides the parties positive, cost effective and time sensitive solution to provide a win-win solution to contracting parties
- Contractual LD provision indicates the owner's willingness to submit in timely manner
- Having enforcement of LD in the contract indicates openness of the owner to apply LD without resorting to arbitration thereby contributing to the satisfaction of contracting parties

5.2 Recommendation and proposals for further studies

- Contract provisions to be applied for SME construction works should be clear, easily understandable, and well detailed in order to assist the LD clauses.
- The amount of LD requirement has to be reduced rather than 10% of contract sum by considering the all factors and completion period of the projects.
- The application of LD clause by deducting some reasonable liquidated damages may alert SME and other project participants for the completion of projects timely at given period.
- Contract provisions should properly be applied by both client/supervisor and SME while administering contracts to apply LD without any pre condition.
- Before application of LD the risk of unforeseeable shortage of materials, weather condition and delay of payment should be considered and shared in such a way that both parties to the contract will fairly manage the risks effectively.
- The concerned authorities in charge of reviewing and modifying standard conditions of contract should look at the impacts or consequences of LD of contract provisions and in particular should seek alternative mechanisms since LD is not intended to serve the client interest.
- Contract provisions should set out clear period of time for payment process on all project participants where payment will be made on time.

- Since the most assessment method employed in quantifying LD amount in relation to SME is the percentage of contract sum, there is a lack of awareness and use of other methods for calculating LDs such as the SCQSLG method or first principle calculations. This shows that LADs are not genuine pre-estimates of possible losses.
- The following areas of study are suggested for further future studies as part of the extension of this research work:
 - Assessment on the factor taken into account in the calculation of LD amount for construction projects done by SME.
 - Assessment of actual LDs amount suffered by client for delayed projects and comparing with 0.1 percent of the contract price per day for a maximum of 10 percent of the contract price for undelivered work.
 - Assessment of LD amounts as genuine pre estimates of loss or not regarding to the project done in Ethiopia.
 - Assessment of the practice of substantiation and evaluation of extension of time claims for project done by SMEs works in Ethiopia
 - Assessment of LD practices for overall for building and road projects in Ethiopia

REFERENCES

- A Guide To The Project Management Body Of Knowledge; PMBOK Guide; 5th edition; Published by Project Management Institute, Inc. 14 Campus Boulevard, Newtown Square, PA 19073-3299 USA, 2013.
- Abrham Aregawi et.al (June 2008), Reducing the impact of time overrun in road projects in Ethiopia, B.Sc Thesis ,Addis Ababa University
- Alnaas, K.A.A., Khalil, A.H.H. and Nassar, G.E., 2014. Guideline for preparing comprehensive extension of time (EoT) claim. *HBRC Journal*, 10(3), pp.308-316.
- Aregash, A. (2005). Puplic private Partnership Projects of the GTZ in Ethiopia. *International Trade and the protection of natural resources in Ethiopia*.
- Arthur, P. (2002). Ghana: Industrial Development in the Post-Structural Adjustment Period. *Canadian Journal of Development Studies*, 23,4, 717–41.
- Beyene, H. (2007). *Enterpreneurship and Small Bussiness Management*. Mekelle.
- Bigsten, A., & Söderbom, M. (2006). What have we learned from a decade of manufacturing enterprise surveys in Africa? In *World Bank Research Observer* (Vols. 21(2), pp.241-265).
- Carty, J. (1995). Construction. *Journal of Construction Engineering and Management* (121), 319328.
- Chen W.F and Richard Liew J.Y. (2003). *The civil engineering handbook*. USA: CRC Press LLC.
- CSA (2003) Urban Informal Sector Sample Survey. Addis Ababa, Central Statistical Authority of Ethiopia.
- David W.Bordoli and Andrew N.Baldwin. (1996). A methodology for assessing construction project delays. *Construction Management and Economics* (1988), 16, 327-337.
- Edmond, G.A. & Miles, D.W.J. (1994), Foundation for change. Aspects of construction industry in the developing countries, ILO, London
- Eggleston, B. (2009). *Liquidated Damages and Extensions of Time: In Construction Contracts* (3 ed.). London: Wiley-Blackwel.
- Elbeltagi, E. (2002). Construction Management. *Leccture note on Construction Management*.
- Endalkachew Mulugeta, (2008) Underlying Causes of Micro and Small Business Failures in Addis Ketema Sub City:A Case Study. A Project Paper Submitted to Addis Ababa

University school of Graduate Studies for the Partial Fulfillment of Masters Degree in Accounting and Finance

Enhassi. (2009). Factors affecting the performance of construction projects in the Gaza Strip. *Journal of Civil Engineering and Management*, 15. Entitlement.

FeMSEDA. (2013). *Three years (2003-2005 EC) Micro and Small Enterprises performance report*. Addis Ababa.Ethiopia.

Frimpongs, Yaw, Oluwoye, Jacob, Crowford , Lynn. (2003). Causes of delay and cost overruns in construction of groundwater projects in a developing countries. *International Journal of Project Management*, 21.

ILO (1987), Guidelines for development of small-medium construction enterprise, Geneva: International Labour Office.

ILO (2006), Training contractors for results: A guide for trainers and training managers. Geneva: International Labour Office.

Ismael, I. (2006). *Construction laws, codes and standards*.

J. R.Murdoch and Will Hughes. (2006). *Construction Contracts Law and Management*.

JSBRI. (2012). Small and medium enterprise moving forward through adversity japan in, White paper on small and medium scale enterprise.

KK Chitkara Construction Project Management, Planning, Scheduling and Controlling, Institute of construction Project Management Gurgaon, Haryana, India

Konjit, D., 2015. Women in the development of micro and small enterprises to ensure sustainable development and food security. *Addis Ababa City Administration Micro & Small Enterprises Development Bureau*.

Lee, Y. (2006). *Liquidated and ascertained damages (lad) and requirement of mitigation*. Malaysia: University Teknologi Malaysia.

Liu, S. (2010). Retrieved from The number of SMEs has accounted for more than 99% of the total of enterprises in China: http://news.xinhuanet.com/fortune/2010-09/26/c_12608785.htm

Loveman, G. &. (1991). The Re-emergence of Small Scale Production:. *An International Perspective, Small Business Economics*, 31(1), 1-38.

Mentor, R. (1985). An investigation into the usefulness and application plans and control techniques to small building contractors.

- MoC. (2020). *Ministry of Construction*. Retrieved 2020, from Ministry of Construction website: <http://www.moc.gov.et>
- Muir, B. (2005). *Challenges Facing Today's Construction Manager*. Delaware: University of Delaware.
- Nigussie, E. K. (2016). *Causes of Delay in Road Construction Projects & Remedial Measures*. Jimma University.
- Project Management, Planning and Control: Managing Engineering, Construction and Manufacturing Projects to PMI, APM and BSI Standards by Albert Lester; Publisher: Elsevier Science & Technology Books, Pub. Date: November 2006, 5th edition. P13
- Rajjaram, R. (2008). *A need Analysis of Financial Management and Accounting Skill in the SME sector in KwaZulu-Natal*. Pietermaritzburg: University of KwaZulu-Natal.
- Rodrick L. Chilipunde, (2010). Constraints and Challenges of SMMEs in Malawi. <http://www.businessmonitor.com/infra/southafrica.html> (Accessed on August 23, 2012)
- Rodrick L. Chilipunde, (2010). Constraints and Challenges of SMMEs in Malawi. <http://www.businessmonitor.com/infra/southafrica.html> (Accessed on August 23, 2012)
- Rwelamila, P.D. (2003). Contractor development models for promoting sustainable building: A case for developing management capabilities of contractors. Paper presented at the meeting of CSIR: Pretoria, South Africa.
- Sasmi, M , Fereig , Nabil Kartam. (2019). *Construction Delay in International Projects, with special reference to the Arabian Gulf area; Causes, Damage Assessments and*
- Seid, K. (2008). *Study of the Problems of Construction Conditions of Contract for Public Works in Ethiopia*. M.Sc Thesis of Civil Engineering, Addis Ababa University, Addis Ababa.
- Shaikh, A.W , Muree, M.R and Soomro, A.S. (2010). Identification of Critical Delay Factors in Construction. *Jour. (Sci.Ser)*, 42.
- Syed M.Ahmed and Salman Azhar. (1999). *Construction Delays in Florida: an Empirical study*. USA: Florida International University.
- TACECA, (1997), Workshop papers on Local Contractor Capacity Building, Tanzanian Civil Engineering Contractors Association, Dar es Salaam
- Thomas , R.,Smith, G,R and Cummings, D.J. (1995). Enforcement of liquidated damages. *Journal of Construction Engineering and Management* (121), 459-463.

Turner and Townsend plc. (2009). *Liquidated Damages Contract Risk Management*. England: Author.

Tylor. (2004). Constraints of growth oriented enterprises in the southern and eastern african region. *Journal of development Enterprenuership norfolk*, 7.

US, D. o. (2010). *The Export Promotion Cabinet's Plan for Doubling U.S. Exports in Five Years*. Report to the President on the National Export Initiative. Retrieved from <http://www.whitehouse.gov/sites/default/fil>

USAID (2009), Generating economic growth while reducing poverty, Available from: http://www.microlinks.org/ev_en.php?=-1194_201&1D2=DO_TOPIC {Accessed on August 2012)

Wissam, B. (2016). *Liquidated Damages versus Delay Penalties and Limitation of Liability: A Comparison between the English and United Arab Emirates Law*. Dubai: British University in Dubai.

Wubishet, J. (2006). *Procurement and Contract Management*. Addis Ababa University.

Yared, H. (2012). *Small and medium enterprise in Ethiopia: the challenges and prospects*. Sejong : KDI .

APPENDIXES A

QUESTIONNAIRE

FOR CONTRACTORS/ SMEs

SECTION I: GENERAL PARTICULARS OF RESPONDENTS

- 1) Which of the following profession/job title do you belong?
 - Construction Manager
 - Quantity Surveyor
 - Procurement Manager
 - Project Manager
 - Managing Director
 - Others (Please Specify).....
- 2) What is your educational qualification?
 - TVET advanced diploma
 - BSc
 - MSc
 - PhD
 - Others (Please Specify).....
- 3) Your area of specialization in the construction sector as an SME?
 - Building sector
 - Highway sector
 - Water sector
 - All infrastructure works
 - Other, specify.....
- 4) For how long does your organization engaged in the construction sector?
 - Less than 2 years
 - 3-5 years
 - More than 5 years
- 5) How many projects did your SME won since your establishment?
 - 1 - 5 Projects
 - 6 - 10 Projects

- 11 - 15 Projects
- Other action (Please state).....

6) How many of the projects were completed beyond the anticipated completion date?

- None of the projects
- 1 - 5 of the projects
- 6 - 10 of the projects
- 11 - 15 of the projects
- Other action (Please state).....

SECTION II – GENERAL QUESTION RELATED TO AWARENESS OF STAKE HOLDERS ON PRACTICE OF LIQUIDATED DAMAGE (LD)

7) Which contract form your firm uses?

- Ministry of Works and Urban Development, MoWUD 1994 contract form
- Public Procurement Agency, PPA 2006, or 2011 contract form
- Fédération Internationale des Ingénieurs- Conseils, FIDIC Red Book contract form
FIDIC 1987 FIDIC 1999
- Others (Please specify).....

8) Please tick (✓) under your selection.

	Always	Sometimes	No	Others	NA (No Idea)
Is there a clause for Liquidated damage provisions in the contracts you have undertaken?					
Do you think that it is necessary to include Liquidated damage provisions in the contracts?					

9) What range of Liquidated damage do you reasonably select?

- 0 - 5 % per total cost
- 5 % - 7 % per total cost
- 7% - 10% per total cost

Others (Please specify).....

10) Is there Extension of Time (EOT) clause provisions in your contract?

Yes

No

11) What will happen when the client caused the delay of the project?

Entitle to Extension of Time

Free from LDs Clause

No action is taking

No idea

Others (Please specify).....

12) Who granted the Extension of Time in your contract (SMEs contract)?

Court

Clients

Project Manager

No idea

Others (Please specify).....

13) Determine who is responsible for the assessment of LD amounts.

Court

Clients

Project Manager

No idea

Others (Please specify).....

14) What factors are taken into account in the calculation of LD?

Client type

The function of the project

Lost's in profit and rental

Others (please specify)

15) What action did the client/consultant take to the delayed projects by your firm?

No action taken

Validation of delay by granting extension

- Application of the Liquidated Damages Clause in the Contract document
- Determination/Termination of the contract
- Other action (Please state).....

16) What was the clients / consultants justification to take the action in 15? (Please state)

.....

.....

17) What method of assessment for LD is used in your organization?

- Use of LD amounts from previous contracts
- Rule of thumb/guesses from experience
- % of contract sum
- SCQSLG method/First principle calculations
- others _____

SECTION III: PROBLEMS IN PRACTICING LIQUIDATED DAMAGE CLAUSES IN RELATION TO SMEs

1) Which of the following factors prevent the application of Liquidated Damages: (Please tick (✓) under your selection)

No	Statement	Least affected	Merely affected	NA (No Idea)	Affected	More affected
1	LD are generally overlooked or ignored by sympathetic.					
2	Inability of contractor to study the contract documents very well before signing					
3	Payment of contractors is not paid on time.					
4	Untimely payment of executed additional work for contractors.					
5	Undetailed work study at the					

	initial stage					
6	LD amount not genuine pre-estimate of the loss					
7	Lapses in contract administration practices					
8	Lack of Awareness regarding to LD					
9	Fear of risk their future work relation with employment					
10	Fear the prolonged justice process					

SECTION IV: IMPACTS OF LIQUIDATED DAMAGE CLAUSES IN CONSTRUCTION PARTIES IN RELATION TO PARTIES.

18) How would liquidated damage clauses in construction impacts construction parties in Mizan-Aman town, which is implemented by SMEs? Please tick (✓) under your selection).

S/N	Item description	Strongly disagree	Disagree	N/A	Agree	Strongly Agree
1	Award process resulted in additional cost and concerns					
2	Misleading understandings incurred costs in prolonged acceptance					
3	Having enforced to LD causes additional cost					
4	Having being subjected to effectiveness of contract agreement articles is benefit all parties					
5	LD related cost reduces work initiation					

6	LD related cost reduces job satisfaction among employees					
7	The enforcement of LD reduces the number of conflicts					
8	The mere presence of enforcement of LD during construction may influence the attitude to construction industry					
9	Having enforcement of LD in the contract indicates the openness of the owner to apply the LD without resorting to arbitration/litigation thereby contributing to the satisfaction of contracting parties					
10	The contractual LD provision indicates the owner's willingness to submit in timely manner					
11	The LD is accepted as procedure that provides the parties positive, cost effective and time sensitive solution to provide win-win solution to contracting parties					

QUESTIONNAIRE

FOR CLIENT COUNTERPART

SECTION I: GENERAL PARTICULARS OF RESPONDENTS

Please, tick on the box [✓]; fill in the blank space if you select others (where applicable).

- 1) Which of the following profession/job title do you belong?
 - Construction Manager
 - Quantity Surveyor
 - Procurement Manager
 - Project Manager
 - Managing Director
 - Others (Please Specify).....
- 2) What is your educational qualification?
 - TVET advanced diploma
 - BSc
 - MSc
 - PhD
 - Others (Please Specify).....
- 3) How many projects have you supervised in your position as a client/ consultant employee?
 - 1 - 5 Projects
 - 6 - 10 Projects
 - 11 - 15 Projects
 - Other action (Please state).....
- 4) What many of the projects where completed beyond the anticipated completion date?
 - None of the projects
 - 1 - 5 of the projects
 - 6 - 10 of the projects
 - 11 - 15 of the projects
 - Other action (Please state).....

SECTION II – GENERAL QUESTION RELATED TO AWARENESS OF PRACTICE OF LIQUIDATED DAMAGE (LD)

5) Which contract form your organization uses?

- Ministry of Works and Urban Development, MoWUD 1994 contract form
- Public Procurement Agency, PPA 2006, or 2011 contract form
- Fédération Internationale des Ingénieurs- -Conseils, FIDIC Red Book contract form FIDIC 1987 FIDIC 1999
- Others (Please specify).....

6) Please, tick on the box [✓]

Statement	Always	Sometimes	No	Others	NA (No Idea)
Is there a clause for Liquidated damage provisions in the contracts you have undertaken?					
Do you think that it is necessary to include Liquidated damage provisions in the contracts?					

7) What range of Liquidated damage do you reasonably select?

- 0 - 5 % per total cost
- 5 % - 7 % per total cost
- 7% - 10% per total cost
- Others (Please specify).....

8) Is there Extension of Time (EOT) clause provisions in your contract?

- Yes
- No

9) What will happen when the client caused the delay of the project?

- Entitle to Extension of Time
- Free from LDs Clause

- No action is taking
- No idea
- Others (Please specify).....

10) Who granted the Extension of Time in your contract (SMEs contract)?

- Court
- Clients
- Project Manager
- No idea
- Others (Please specify).....

11) Determine who is responsible for the assessment of LD amounts.

- Court
- Clients
- Project Manager
- No idea
- Others (Please specify).....

12) What factors are taken into account in the calculation of LD?

- Client type
- The function of the project
- Loses in profit and rental
- Others (please specify) _____

13) What action did the client/consultant take to the delayed projects by your firm?

- No action taken
- Validation of delay by granting extension
- Application of the Liquidated Damages Clause in the Contract document
- Determination/Termination of the contract
- Other action (Please state).....

14) What was the clients / consultants justification to take the action in 13? (Please state)

.....
.....

15) What methods of assessment for LD are used in your organization?

- Use of LD amounts from previous contracts
- Rule of thumb/guesses from experience
- % of contract sum
- SCQSLQ method/First principle calculations
- others _____

SECTION III: PROBLEMS IN PRACTICING LIQUIDATED DAMAGE CLAUSES IN RELATION TO SMEs

16) Which of the following factors prevent the application of Liquidated Damages: (Please tick (✓) under your selection)

No	Statement	Least affected	Merely affected	NA(No Idea)	Affected	More affected
1	LD are generally overlooked or ignored by sympathetic.					
2	Inability of contractor to study the contract documents very well before signing					
3	Payment of contractors is not paid on time					
4	Untimely payment of executed additional work for contractors.					
5	Undetailed work study at the initial stage					
6	LD amount not genuine pre-estimate of the loss					

7	Lapses in contract administration practices					
8	Lack of Awareness regarding to LD					
9	Fear of risk their future work relation with employment					
10	Fear the prolonged justice process					

SECTION IV: IMPACTS OF LIQUIDATED DAMAGE CLAUSES IN CONSTRUCTION PARTIES IN RELATION TO SMEs.

17) How would liquidated damage clauses in construction impacts construction parties in Mizan-Aman Town, which is implemented by SMEs? Please tick (✓) under your selection).

S/N	Item description	Strongly disagree	Disagree	N/A	Agree	Strongly Agree
1	Award process resulted in additional cost and concerns					
2	Misleading understandings incurred costs in prolonged acceptance					
3	Having enforced to LD causes additional cost					
4	Having being subjected to effectiveness of contract agreement articles is benefit all parties					
5	LD related cost reduces work initiation					

6	LD related cost reduces job satisfaction among employees					
7	The enforcement of LD reduces the number of conflicts					
8	The mere presence of enforcement of LD during construction may influence the attitude to construction industry					
9	Having enforcement of LD in the contract indicates the openness of the owner to apply the LD without resorting to arbitration/litigation thereby contributing to the satisfaction of contracting parties					
10	The contractual LD provision indicates the owner's willingness to submit in timely manner					
11	The LD is accepted as procedure that provides the parties positive, cost effective and time sensitive solution to provide win-win solution to contracting parties					

APPENDIXES B

Critical Value of the Spearman's Ranked Correlation Coefficient (Rs) Taken From Zar, 1984 Table B.19

n	0.50	0.20	0.10	0.05	0.03	0.01	0.005	0.002	0.001
4	0.500	1.000	1.000						
5	0.500	0.800	0.900	1.000	1.000				
6	0.371	0.657	0.829	0.886	0.943	1.000	1.000		
7	0.321	0.571	0.714	0.786	0.893	0.929	0.964	1.000	1.000
8	0.310	0.524	0.643	0.738	0.833	0.881	0.905	0.952	0.976
9	0.267	0.483	0.600	0.700	0.783	0.833	0.867	0.917	0.933
10	0.248	0.455	0.564	0.648	0.745	0.794	0.830	0.879	0.903
11	0.236	0.427	0.536	0.618	0.709	0.755	0.800	0.845	0.873
12	0.217	0.406	0.503	0.587	0.678	0.727	0.769	0.818	0.846
13	0.209	0.385	0.484	0.560	0.648	0.703	0.747	0.791	0.824
14	0.200	0.367	0.464	0.538	0.626	0.679	0.723	0.771	0.802
15	0.189	0.354	0.446	0.521	0.604	0.654	0.700	0.750	0.779
16	0.182	0.341	0.429	0.503	0.582	0.635	0.679	0.729	0.762
17	0.176	0.328	0.414	0.485	0.566	0.615	0.662	0.713	0.748
18	0.170	0.317	0.401	0.472	0.550	0.600	0.643	0.695	0.728
19	0.165	0.309	0.391	0.460	0.535	0.584	0.628	0.677	0.712
20	0.161	0.299	0.380	0.447	0.520	0.570	0.612	0.662	0.696
21	0.156	0.292	0.370	0.435	0.508	0.556	0.599	0.648	0.681
22	0.152	0.284	0.361	0.425	0.496	0.544	0.586	0.634	0.667
23	0.148	0.278	0.353	0.415	0.486	0.532	0.573	0.622	0.654
24	0.144	0.271	0.344	0.406	0.476	0.521	0.562	0.610	0.642
25	0.142	0.265	0.337	0.398	0.466	0.511	0.551	0.598	0.630
26	0.138	0.259	0.331	0.390	0.457	0.501	0.541	0.587	0.619
27	0.136	0.255	0.324	0.382	0.448	0.491	0.531	0.577	0.608
28	0.133	0.250	0.317	0.375	0.440	0.483	0.522	0.567	0.598
29	0.130	0.245	0.312	0.368	0.433	0.475	0.513	0.558	0.589
30	0.128	0.240	0.306	0.362	0.425	0.467	0.504	0.549	0.580
31	0.126	0.236	0.301	0.356	0.418	0.459	0.496	0.541	0.571
32	0.124	0.232	0.296	0.350	0.412	0.452	0.489	0.533	0.563
33	0.121	0.229	0.291	0.345	0.405	0.446	0.482	0.525	0.554
34	0.120	0.225	0.287	0.340	0.399	0.439	0.475	0.517	0.547
35	0.118	0.222	0.283	0.335	0.394	0.433	0.468	0.510	0.539
36	0.116	0.219	0.279	0.330	0.388	0.427	0.462	0.504	0.533
37	0.114	0.216	0.275	0.325	0.383	0.421	0.456	0.497	0.526
38	0.113	0.212	0.271	0.321	0.378	0.415	0.450	0.491	0.519
39	0.111	0.210	0.267	0.317	0.373	0.410	0.444	0.485	0.513
40	0.110	0.207	0.264	0.313	0.368	0.405	0.439	0.479	0.507
41	0.108	0.204	0.261	0.309	0.364	0.400	0.433	0.473	0.501
42	0.107	0.202	0.257	0.305	0.359	0.395	0.428	0.468	0.495
43	0.105	0.199	0.254	0.301	0.355	0.391	0.423	0.463	0.490
44	0.104	0.197	0.251	0.298	0.351	0.386	0.419	0.458	0.484
45	0.103	0.194	0.248	0.294	0.347	0.382	0.414	0.453	0.479
46	0.102	0.192	0.246	0.291	0.343	0.378	0.410	0.448	0.474
47	0.101	0.190	0.243	0.288	0.340	0.374	0.405	0.443	0.469
48	0.100	0.188	0.240	0.285	0.336	0.370	0.401	0.439	0.465
49	0.098	0.186	0.238	0.282	0.333	0.366	0.397	0.434	0.460
50	0.097	0.184	0.235	0.279	0.329	0.363	0.393	0.430	0.456