ST.MARY'S UNIVERSITY

SCHOOL OF GRATUATE STUDIES

MBA PROGRAM

CONTRACTOR'S PAYMENT DELAY AND ITS IMPACT ON GOVERNMENT CONSTRUCTION PROJECTS

IN THE CASE OF BOLE SUB CITY CONSTRUCTION OFFICE.

By

ABEBE ESHETU GELETA

JUNE, 2020

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A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES INPARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PROJECT MANAGEMENT.

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ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate studies for examination with my approval as a university advisor.

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Advisor	signature
St. Mary's University, Addis Ababa	JUNE, 2020

DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Asst Prof. Dereje Teklemariam. All sources of material used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning for the purpose of earning any degree**.**

Name	**Signature**
St. Mary's University Addis Ababa	**June, 2020**

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APPROVED BY BOARD OF EXAMINERS

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ACRONYMS/ABBREVIATIONS

FIDIC:-Federation Internationals Des Ingeniers-Conseils

PPA:-Power Purchase Agreement

BSCCO:-Bole Sub City Construction Office

CCC: - Contractor, Consultant and clients

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ABSTRACTS

Ethiopia has given special attention for the development of government construction projects such as schools, clinics, Hospitals, administration offices etc. in this regards, Bole sub city construction office (BSCCO) has been given the responsibility to design, procure, regulate, and administer construction works and consultancy service. For BSCCO, to competently discharge these responsibility, it is essential that those members of BSCCO responsible for the project management to have a complete understanding of the Technical, Contractual and Financial aspects of the project. As part of these competence and capability, BSCCO is expected to have effective budget allocation and utilization system. However, BSCCO has usually faced difficulty in paying due payments on time to the Contractors and Consultants. As a result of this, the Contractor's cash flow status have been affected, and, ultimately it results in delay in construction, quality related problems, late interest payment, increase in construction cost, and other cases of Contractor's claim on a project.

This research work, therefore, focuses on identifying the causes and impacts of delay in Contractor's payment on construction projects administered under BSCCO based on randomly selected 133 contractor's from 200 total number of contractors in

which late interest payment has been effected and questionnaire based survey with engineers from BSCCO, Contractor and Consultant and; subsequently, the detailed sources of the delay, potential impacts, and possible remedial measures were identified.

Accordingly, it was found that ineffective budget allocation and utilization is the major causes for delay in contractors payment and delay in progress of the physical works, reduced quality in construction works, increase in frequency of workmanship problems, insufficient resources arrangements, inability to comply environmental, Health, Safety and social Management requirements and increase in construction and supervision cost of project were some of impacts of delay in contractors payments.

To this respect, as a major outcome of the study, it has been arrived that maximizing the efficiency of design, the actual performance of the contractors, information on past performance of contractors and resources allocated on the project site and capacity of professionals working at planning and program and implementation directorate are very crucial matters to plan and allocate sufficient fiscal year budget by the client so that occurrence of contractors payment delay.

Key words: Delay, payment, contractors

CHAPTER ONE

INTRODUCTION

1.1. Background

The construction industry is the engine of national economy through which the total of physical development is achieved. The construction industry is a vital element of the economy and has a significant effect on the efficiency and productivity of other industry sectors. One cannot think of widespread investment in manufacturing, agriculture, or service sectors unless the construction results of infrastructure facilities are in place. In some of the developing countries, the growth rate of construction activity outstrips that of population and of GDP (Chit Kara, 2004).

Previously conducted study found that delayed payment of the contractor affected the project by causing: loss of productivity and efficiency (71.8%); increase in time-related costs (71.8%); rescheduling and re-sequencing of works (69.2%); extension of time and acceleration (69.2%); as well as prevention of early completion (53.8%). Therefore, this study will investigate the impact of Contractor's Payment Delay and its Impact on government construction Projects with relative to time, budget, and quality specifications.

1.2. Statement of the Problem

Reviewing government construction projects administered under Bole sub city construction office, it has been noted that payment have not been effecting on the time stipulated in the agreement due to budget constraints. Consequently, besides for measured value of works, Bole sub city construction office has been expending additional amount of money to the projects in the form of Late Interest payment. To this respect, it has been noted that Bole sub city construction office has expended ETB 5,250,00 in this budget year as late interest payment due to delay in Contractors' payment on randomly selected 133 contractors . Besides, late interest payment may result in other negative impacts; disruption of works, poor quality works, bad communication between contracting parties, job firing and etc.

In this regard, even though requesting late interest payment and other contractual remedies for contractors' payments which have been delayed by the Employer is legitimate, it is less likely to

Obtain local Contractors who have been utilizing the opportunity of late interest payment.

As a result of this, the cash flow of the Contractor and the progress and quality of the projects may be affected.

1.3. Objectives of the study

1.3.1 General Objectives

The general objective of this research is to investigate the impacts of Contractor's Payment Delay and its Impact on government construction Projects administered under Bole sub city construction office.

1.3.2 Specific Objective of the study

Specifically, the objective of the study are:

I. To assess if there are late payments by Bole sub city construction office.

II. What are the causes of late Payments on Construction projects administered under Bole sub city construction office?

III. To assess if there are compensation for late payments.

IV. What are the impact of Late Payment on government construction projects administered under Bole sub city construction office

1.4. Significance of the Study

This study is relevant because it assists the government and relevant parties in addressing problems associated with the effects of delayed payments and effectively improve government construction industry. It is of the researcher's anticipation that the Bole sub city construction office and relevant parties would adopt and implement the necessary plan of action in order to reduce occurrence of delay in payment so that friendly and enjoyable working environment for all parties and the payment flows in construction projects administered under Bole sub city construction office would be improved. The result of this research may be of significance to policy makers, top management of Addis Ababa construction office, respective professionals working in planning and implementation directorate, financers, consultants and contractors. It also helps in reducing delayed payment related matters, be a source of knowledge and increase contractors' cash flow forecasting.

1.5 Scope of the Study

The study focus on government Projects administered under Bole sub city construction office wherein delay in contractor's payment and late interest payment have been practiced due to the reason that Bole sub city construction office usually undertake large volumes of works and, hence, engage well experienced contractors and consultants.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical review

2.1.1 Definition of Construction Delays

Delay is known as the most common, costly and risky problem encountered in construction project and that because of the overriding importance of time for both the owner in terms of performance and the contractor in terms of money, it is the source of frequent disputes and claims leading to arbitration, litigation and eventual abandonment of the total project scheme (Ahmed S.M, 1999)

There are a number of definitions for delay: to make something happen later than expected; to cause something to be performed later than planned; or to not act timely. Each of these definitions can describe a delay to an activity of work in a schedule. On construction projects, as well as on other projects where a schedule is being used to plan work, it is not uncommon for delays to occur. It is what is being delayed that determines if a Project or some other deadline, such as a milestone, will be completed late. (Theodore, 2009)

2.1.2 Types of Construction Delay

Generally, there are four basic ways to categorize delays: (Theodore, 2009)

1. Critical or noncritical
2. Excusable or non-excusable
3. Compensable or non-compensable
4. Concurrent or non-concurrent

1. Critical Versus Non critical Delays

In any analysis of delays to a Project, the primary focus is on delays that affect the progress of the entire Project (the Project end date or milestone date) or that are critical to the Project completion. However, many delays occur that do not delay the Project completion date or a milestone date. Delays that affect the Project completion, or in some cases a milestone date, are considered critical delays, and delays that do not affect the Project completion, or a milestone date, are non-critical delays. The concept of "critical" delays emanates from Critical Path Method (CPM) scheduling. While the determination of a critical activity is a major element of CPM scheduling, all projects, regardless of the type of schedule, have "critical" activities. If these activities are delayed, the Project completion date or a milestone date will be delayed. In some contracts, the term "controlling item of work" will be used. Normally, this refers to critical activities or critical work (Theodore, 2009). Regardless of the type of schedule used, all projects have a critical path—

the path of activities that if delayed will delay the completion date. Determining which activities truly control the Project completion date depends on the following:

- ✓ The Project itself
- ✓ The Contractor's plan and schedule (particularly the critical path)
- ✓ The requirements of the Contract for sequence and phasing
- ✓ The physical constraints of the Project—how to build the job from a practical perspective

Regardless of how one analyzes a project and the schedule to find the delays, there is one overriding criterion: The analysis must accurately consider the contemporaneous information when the delays were occurring. "Contemporaneous information" refers to the daily reports, the schedule in effect, and any other job data available that show the circumstances at the time of the delays. Proper research and documentation eliminates the "but-fors" and any other hypotheses contrived to advance predisposed conclusions or desired results (Theodore, 2009)

2. Excusable versus Non excusable Delays

A. Excusable Delays

All delays are either excusable or no excusable. An excusable delay, in general, is a delay that is due to an unforeseeable event beyond the Contractor's or the Subcontractor's control.

As sited in Alaghbari,et.al, (2007) excusable delays are known as "force majeure" delays, and commonly called "acts of God" because they are not the responsibility or fault of any particular party. Most contracts allow for the contractor to obtain an extension of time for excusable delays, but not additional money. Normally, based on common general provisions in public agency specifications, delays resulting from the following events would be considered excusable:

- ✓ General labor strikes
- ✓ Fires
- ✓ Floods
- ✓ Acts of God
- ✓ Owner-directed changes
- ✓ Errors and omissions in the plans and specifications
- ✓ Differing site conditions or concealed conditions
- ✓ Unusually severe weather
- ✓ Intervention by outside agencies

- ✓ Lack of action by government bodies, such as building inspection

These conditions may be reasonably unforeseeable and not within the contractor's control. Before the analyst concludes that a delay is excusable based solely on the preceding definitions, he or she must refer to the construction Contract documents. Decisions concerning delays must be made within the context of the specific Contract. The Contract should clearly define the factors that are considered valid delays to the Project that justify time extensions to the Contract completion date. For example, some contracts may not allow for any time extensions caused by weather conditions, regardless of how unusual, unexpected, or severe (Alaghbari,et.al, 2007).

B. Non excusable Delays

Based on Theodore, (2009) non excusable delays are events that are within the Contractor's control or that are foreseeable. These are some examples of no excusable delays:

- ✓ Late performance of subcontractors
- ✓ Untimely performance by suppliers
- ✓ Faulty workmanship by the Contractor or Subcontractors

A project-specific labor strike caused by either the contractor's unwillingness to meet with labor representatives or by unfair labor practices again, the contract is the controlling document that determines if a delay would be considered no excusable. For example, some contracts consider supplier delays excusable if the Contractor can prove that the materials were requisitioned or ordered in a timely manner, but the material could not be delivered due to circumstances beyond the control of the Contractor. Other contracts may not allow such delays. The Owner and the Designer or drafter of the Contract specifications must be sure the Contract documents are clear and unambiguous. Similarly, before signing the Contract, the Contractor should fully understand what the Contract defines as excusable and no excusable delays. (Theodore, 2009)

3. Compensable versus No compensable Delays

A compensable delay is a delay where the contractor is entitled to a time extension and to additional financial compensation. Relating back to the excusable and non-excusable delays, only excusable delays can be compensable. Non-compensable delays mean that although an excusable delay may have occurred, the contractor is not entitled to any added compensation resulting from the excusable delay. Thus, the question of whether a delay is compensable must be answered. Additionally, a non-excusable delay warrants neither additional compensation nor a time extension (Theodore, 2009).

In addition to the compensable delays that result from contract changes by change notice, there are compensable delays that can arise in other ways. Such compensable delays are excusable delays, suspensions, or interruptions to all or part of the work caused by an act or failure to act by the owner resulting from owner's breach of an obligation, stated or implied, in the contract. If the delay is compensable, then the contractor is entitled not only to an extension of time but also to an adjustment for any increase in costs caused by the delay (Al-Gahtani and Mohan, 2007).

4. Concurrent Delays

If only one factor is delaying construction, it is usually fairly easy to calculate both the time and cost resulting from that single issue. A more complicated but also more typical situation is one in which more than one factor delays the project at the same time or in overlapping periods of time. These are called concurrent delays (Alaghbari, et al 2007). According to Alwi, et al., (2002), (as cited in Abubeker, 2015) concurrent delays occur when both owner and the contractor are responsible for the delay. Generally, if the responsible parties of the delays are intertwined, neither the contractor can be held responsible for the delay (force to accelerate, or be liable for liquidated damages) nor can he recover the delay damages from the owner. Until the development of CPM schedule analysis, there was no reliable method to differentiate the impact of contractor caused delays from owner caused delays (Abubeker, 2015). In analyzing concurrent delays, each delay is assessed separately and its impact on other activities and the project duration is calculated. The following guidelines for classifying these kinds of concurrent delays:

- ✓ If excusable and non-excusable delays occur concurrently, only a time extension is granted to the contractor;
- ✓ If excusable with compensation and excusable without compensation delays occur concurrently, the contractor is entitled to time extension, but not to damages; and
- ✓ If two excusable with compensation delays occur concurrently, the contractor is entitled to both time extension and damages. An example of a concurrent delay would be if the client failed to supply detailed designs for specified machine installations (excusable delay with compensation) while at the same time, the contractor who would have installed those machines was on strike (excusable delay without compensation). In this scenario, since both excusable with compensation and excusable without compensation delays are present, the contractor would be entitled to a time extension, but not to damages.

2.2 Empirical review

Delays occur in every construction project and the significant of these delays varies considerably from project to project. Many scholars have studied the causes of construction project delay for the past few years and have identified some factors as the main causes of delay and the effect of the delay. Among numerous studies have been carried out internationally and in developing countries; the researcher sick to review related studies conducted in road construction delay's cause and effect in developing country like Ethiopia. The following findings of such studies have been reviewed for this research is some of prior studies on cause and effects of delay in different parts of the world.

2.2.1 Studies on Causes of Delay

Mansfield et al, (1994) identified 16 major factors that caused delays and cost overruns in Nigeria. A questionnaire survey was carried out with contractors, consultants and client organizations in Nigeria. They presented that the causes of delay and cost overruns in Nigerian construction projects were attributed to finance and payment arrangements, poor contract management, and shortages in materials, inaccurate estimation, and overall price fluctuations. (Mansfield N. R., 1994) Assaf, S. A. and S. Al-Hejji, (2006) Conducted a time performance survey of different types of construction projects in Eastern Province of Saudi Arabia to determine the causes of delay and their importance according to each project participant (owner, consultant, and contractor).

It was concluded that 70% of projects experience time overrun. The survey was conducted with 23 contractors, 19 consultant and 15 owners.

They identified seventy-three (73) causes of delay and grouped them into nine classes during the research. The most common cause of delay identified by all three parties was "change order. The overall results are stated that the factor related to labor, contractor, project owner and consultant are in the highest rank. (Assaf, 2006) Le-Hoai, et.al (2008) are Studied problems related to delays and cost overruns during construction phase and they identified that the cause for construction delays and cost overruns in overall context are poor site management and supervision, poor project management assistance, financial difficulties of owner, financial difficulties of contractor and design changes are the five most frequent, severe and important causes. (Le-Hoai, 2008) Mezher T.M, and Tawil W (1998) Carried out a research to find out the causes of delaysin construction industry in Lebanon. A total of 64 causes of delays were identified through research in which client, contractor and consultant were undertaken the study.

All three parties generally agreed on the ranking of the major categories of delay factors. Owners had more concerns with regard to financial issues, while contractors ranked 17 contractual relationships highest, and finally, consultants firms ranked project management highest.

These causes were categorized in 10 main groups: materials, manpower, equipment, financing, changes, government relations, project management, site conditions, environment and contractual relationships. (Mezher, 1998) Abdalla, M. Odeh and Hussien T. Battaineh (2000) identify the most important causes of delay in construction projects with traditional type contracts from the viewpoint of construction contractors and consultants.

Results of their survey indicates that contractors and consultants agreed that owner interference, inadequate contractor experience, financing and payments, labor productivity, slow decision making, improper planning, and sub-contractors are among the top ten most important factors. (Abdalla, 2000) Al-Momani, A. H (2000) conducted a quantitative analysis of construction delays by examining the records of 130 public building projects constructed in Jordan during the period of 1990-1997.

The researcher presented regression models of the relationship between actual and planned project duration for different types of building facilities.

The researcher concluded that the main causes of delay in construction projects relate to designers, user changes, weather, site conditions, late deliveries, economic conditions, and increase in quantities. (Al-Momani, 2000) Also, Odeh and Battaineh (2002) studied causes of construction delay in Jordan.

In their study presents, results of the survey indicate that contractors and consultants agreed that owner interference, inadequate contractor experience, financing and payments, labor productivity, slow decision-making, improper planning, and subcontractors are among the top ten most important factors. They classified the causes of delays into the following eight major groups:

A. Client related factors: - include finance and payments of completed work, owner interference, slow decision-making by owners, and unrealistic imposed contract duration;

B. Contractor related factors: - include subcontractors, site management, construction methods, improper planning, and mistakes during construction, and inadequate contractor experience;

C. Consultant related factor: - include contract management, preparation and approval of drawings, quality assurance/control, and waiting time for approval of test and inspections;

D. Material related factors: - include quality of material and shortage in material;

E. Labor related factors: - include labor supply, labor productivity;

F. Equipment related factors**: -** equipment availability and failure;

G. Contract related factor include change orders, mistakes and discrepancies in contract documents, contractual relationship related factor include, major disputes and negotiations, inappropriate average organizational structure linking all parties to the project, and lack of communication between the parties;

H. External factors include weather condition, regulatory changes and building code, problems with neighbours, and unforeseen ground conditions. Long, et al. (2004), studied the problems in large construction projects in developing countries, a case study from Vietnam. They revealed that the problems could be grouped under five major factors; incompetent designers/contractors; poor estimation and change management; social and technological issues; site related issues; and improper techniques and tools. (Long, 2004) The study of Ashraf Samarah and Ghanim A. Bekr (2016) was carried out to determine the causes and effects of delay in the Public Construction Projects of Jordan. They have identified 55 delay causes distributed over four categories. Out of them top ten factors causing delays for public sector projects in Jordan were are: inadequate management and supervision by the contractor, client's changes of the design, inadequate planning and control by the contractor, using lowest bid that lead to low performance, changes in the extent of the project , errors in design and contract documents , progress payments are not made in time by the client, Rework due to mistakes during construction, Changes in the original design and Low level productivity. (Ashraf Samarah D. A., 2016) Ghanim A. Bekr, (2015) studied the causes of delay in Iraq construction projects by identifying and ranking the delay factors.

The 88 factors were categorized into eight major groups and were ranked.

The results show that clients, consultants, and contractors all agreed that the contractor group of delay factors was the most influential factor. Material related factors were considered the second most important factor causing delay in construction projects followed by Designer’s related factors and Consultants/supervisors related factors. (Werku Koshe, 2016) Biruk Zegeye (2008) identifies and investigates the key causes delay in completion time and their impacts on road construction projects in Addis Ababa. Using questionnaire survey, targeted on the main stakeholders in the sector, perception on 57 hypothesized causes of delay is identified.

The 57 causes of delay are grouped under eight major categories or sub groups; material related, labor related, equipment related, finance related, contractor related client related, consultant related and external factor related cause of delays.

Based on the analysis he forwarded the following findings:

1. Out of all the eight main groups' contractor, consultant and financial related factors are the top three categories from the client's perspective for causing delay on the road projects. While contractors on the contrary made the client related factors the first followed by external and consultant related factor.

According to the consultants, the first contributor of delay is external/ environmental factor and the contractor and equipment related being the second and the third.

2. Every party has related the causes of project delay with other parties or external related causes. There is a relatively a strong agreement between the client and the contractors and equal agreement between the consultant and the contractor and the client and the consultant.

All the parties have agreed on only on weighting the labor related factors.

3. On the analysis of the average results of the respondents, the consultant related factors become the first category that contributor of the causes of delay of the road projects. (Zegeye, 2008) Siraw Yenesew (2014) studied the Factors Contributing to time overruns on Road Construction Project sunder Addis Ababa City Administration and showed possible causes of delay as internal and external, financial and non-financial. Construction delay problem in the capital city of Ethiopia was studied by slow cite clearance, contractors financial problems, Inflation, exchange rate fluctuation, supply of material, inadequate contractors experience, low productivity of labor, inaccurate cost estimation, poor resource management, improper planning. (Yenesew, 2014) The literatures sited above have identified the causes of delay by categorizing factors in groups without differentiating across project lifecycle. Even if this research paper focuses on the finding of the causes of delays at execution and closing or commissioning phase it is vital to know the causes of delays at all stage of the project life cycle.

A. Pre-planning stage

- ✓ Delay in regulatory approvals (external)
- ✓ Unavailability/delayed availability of funds (external)
- ✓ Land/site handover (external)
- ✓ Lack of project managers/commercial managers with adequate planning skills (internal)
- ✓ Lack of Liasioning officer/Planning engineer (internal)
- ✓ Lack of cost managers (internal)
- ✓ Lack of safety officers/environmental practitioners (internal)

B. Planning and design stage

- ✓ Lack of strong R&R policies (external)
- ✓ Ineffective procurement planning (external)
- ✓ Design/scope change (external)
- ✓ Delay in regulatory approvals (external)
- ✓ Delay in decision making (external)
- ✓ Lack of planning engineer/commercial managers (internal)
- ✓ Lack of liasion officer or planning engineer (internal)
- ✓ Lack of MEP engineers (internal)
- ✓ High cost of environmental protection (internal)

C. execution and monitoring

- ✓ Weak/ineffective project planning & monitoring (external)
- ✓ Contractual disputes (external)
- ✓ Unavailability/delayed availability of funds (external)
- ✓ Lack of strong R&R policies (external)
- ✓ Delay land/site handover (external)
- ✓ Material price escalation beyond projection (external)
- ✓ Escalation in labour costs (external)
- ✓ Incremental financial cost like change in foreign exchange rate, inflation, interest rate change (external)

D. Closure and handover

Pre-commissioning teething troubles (external)

Contractual disputes (external)

- ➢ Lack of commissioning, project and site managers, audit and total quality management professionals (internal)

2.2.2 Studies on Effects of Delay

A research work carried out by Aibinu and Jagboro (2002) on the effects of construction delays in Nigerian construction industry; reveals six effects of delay on project performance. These effects are time and cost overruns, disputes, arbitration, litigation and total abandonment.

2.3. Overview of Payment and related Clauses in Ethiopian Civil Code

2.3.1 Payment

Payment is a sum of money paid to someone in return for goods, work done or services rendered.

In the construction industry, payment is the sum of money paid to contractors after their work for Certain projects has been successfully completed. In a typical engineering and construction contract, it is apparent that the contractor has promised to carry out all the works under the Contracts. On the other hand, the employer must keep his side of the promise by giving necessary consideration to payment when due which in most cases comes in monetary form.

Payment is considered as the life blood of the construction industry because construction projects often involve very large capital outlay (Ameer-Ali, 2005). It is very obvious that a healthy and consistent disbursement of money is a critical point in determining contractor performance. In order to ensure the flow of the work activities under the contract and its eventual successful realization, construction contracts have to be drafted. Most of these standard forms of contracts contain specially drafted clauses which govern all aspects of the subject of payment under the contract; these clauses have been reduced to the following principal categories:

FIDIC (1987) sub-clause 60.1, payment is the value of money that the Contractor submits to the Engineer after the end of each month signed by the Contractor's representative approved by the Engineer in accordance with the relevant provisions of contract in respect of:

- ✓ the value of the Permanent Works executed,
- ✓ any other items in the Bill of Quantities including those for Contractor's Equipment, Temporary Works, day works and the like,
- ✓ The percentage of the invoice value of listed materials, all as stated in the Appendix to Tender, and Plant delivered by the Contractor on the Site for incorporation in the Permanent Works but not incorporated in such Works, adjustments as per the contract, and other sum to which the Contractor may be entitled under the Contract or otherwise

PPA (2011), unless otherwise specified in the SCC, Payment is monthly statement submitted by the

- ✓ Contractor for interim payment to the Engineer at the end of each period referred to in the contract in a
- ✓ Form approved by the Engineer. The monthly statement shall include the following items, as applicable:
- ✓ The estimated contract value of the permanent works implemented up to the end of the

- ✓ period in question;
- ✓ An amount reflecting any price adjustment pursuant to GCC and
- ✓ An amount to be withheld as retention sum under GCC.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This study adopted a quantitative approach. The views from Contractors, Consultants and Client, working on government projects under the administration of Bole sub city construction office, has been collected via a questionnaire survey and case study on 133 randomly selected contractor's working projects with the client by lottery method. The questionnaire is designed according to the objectives of research by reviewing literature dealing with delayed payments and other relevant topics. It is designed to be brief, concise and straightforward to encourage a high response rate from the potential Stakeholders.

The stakeholders have expressed their views and opinions by selecting the appropriate answer or giving short answers to the questions. The sources of literature review included relevant books, case law, journals, magazines, dissertations and seminar proceedings.

3.2 Research Approach

A **quan**titative strategy has been adopted in this research due to the fact that quantitative research follows a deductive and induction approach in relation to theory and is concerned with the design measurement and sampling (Naoum, 2002). The strategy employs the use of statistical techniques to identify facts and casual relationships. Quantitative research is also objective in nature (Naoum, 2002).

3.3 Research Design

This study has a descriptive type which is concerned with the present situation and attempts to determine the status of the phenomena under investigation.

Descriptive type of research is chosen because it helps to:

- ✓ Identify present conditions and point to present needs.
- ✓ Study immediate status of a phenomenon.
- ✓ Fact findings
- ✓ Examine the relationships of traits and characteristics (trends and patterns)
- ✓ The descriptive survey is more realistic than other research types

Researcher have collected evidence from contractors, consultants and client's experienced facts. Further attempt has been then made to determine the prevailing opinion within a particular group.

3.4 Data Collection

Respondents' feedback and Archival documents of selected contractors, consultant's and clients of Bole sub city construction office has been used as sources of data for the study. The respondents' feedback has been collected using questionnaire from Bole sub city construction office, Contractors and Consultants working in projects where late interest payment has been experienced. Accordingly, 133 contractors who are working with BSCCO, wherein the Client has effected late interest Payment to the Contractor has been selected randomly by lottery method and; consequently, cause and effect of delay in Contractor's Payment analyzed.

3.4.1 Data Source

The study has employed both primary and secondary sources of data collection.

I. Primary Sources

In order to realize the target, the study used well-designed questionnaire as best instrument. Besides, face-to-face interviews with the contractors, consultants and bole sub city construction office. The interview method of data collection preferred due to its high response rate. That is, it gives the two people concerned an opportunity to interact and get details on the questions and answers. Through interviews, clarification of issues is easily achievable leading to accuracy of data from the respondents.

II. Secondary Sources

Secondary information from files, pamphlets, office manuals, circulars and policy papers are used to provide additional information where appropriate.

3.5 Sample Size Distributions

Wood and Haber (1998) defined the sampling as the process of selecting representative units of a Population for the study in research investigation. A sample is a small proportion of a population selected for observation and analysis.

To determine sample size, it is possible to use statistical formula method or Sample size table from research Advisor that suggests the optimal sample size – given a population size, a specific margin of error, and a desired confidence interval. This can help researchers avoid the formulas altogether (Source: Sample size table from research Advisor (2006) Posted in Research-Advisor.com.

For this research, sample size table from research advisor which has presented results of one set of these calculations for Confidence Level = 95% and Margin of Error = 5% has been referred to determine sample size of population.

Determining Sample size of Contractors

In this research, the numbers of local contractors who are working with the sub city are 200 and subsequently, requested late interest payment are used to determine sample size of contractors.

To this respect, the total numbers of local Contractors who have been working with Bole Sub City Construction office and requesting late interest payment are found to be 200. Hence, the total population size is 200.

Accordingly, by using Sample size formula from research Advisor as discussed above, the sample size of Construction Company is found to be 133.33 approximately 133 which is calculated as follows .

Sample Size and

The sample size of the MSE was calculated based on Yamane's formula (Yamane, 1967)

$$n = \frac{N}{1+Ne^2}$$

Where: n= the sample size

N= the size of population

E= the error of 5 percent point

N=200 N=no of contractor working with Bole sub city, n=Sample size

e=5%=0.05 e=error

Therefore, $n=200/ (1+200*0.05^2)=200/1.5=133.3333=\underline{133}$

3.6. Data Analysis

This is the further transformation of the data which is processed to look for patterns and relationship between and/or among data groups by using descriptive and inferential (statistical) analysis. The Statistical Package for Social Science (SPSS) version 20 software were used to analyse the data obtained from primary sources. Specifically, descriptive statistics (mean standard deviation and charts has been taken from the tool.

Descriptive Analysis

Descriptive analysis has been used to reduce the data in to a summary format by tabulation (the data arranged in a table format) and measure of central tendency (mean and standard deviation). Moreover, pie charts has been used to describe the general characteristics of the enterprises. The reason to use descriptive statistics is to compare the different factors. Besides, the interview questions has analyzed using descriptive narrations through concurrent triangulation strategy.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter is concerned with data presentation, analysis and interpretation. To come up with the required results the researcher has used questionnaires and document analysis as data tools. Accordingly, relevant data are collected from the sample respondents. Majority of the respondents, have filled out and returned the questionnaires distributed. As indicated billow questionnaires was distrusted to all 133 selected and 129 are returned the questionnaire and the rest 4 did not return the questionnaires distributed to them.

Table 4.1 Rate of return of distributed details

	NO	Response rate (%)
Questionnaire distributed	133	100
Questionnaire returned	129	97
Questionnaire unreturned	4	3

In this section, the data collected using the tools mentioned above are tabulated, analyzed and interpreted using descriptive statistics. The chapter comprises two parts. The first part presents the demographic characteristics of the respondents. The second part presents detailed analysis and discussion of the data collected through the distribution of questionnaires and document analysis. The details of these are presented below.

4.2 Demographic Characteristics of the Respondents.

The survey on demographic characteristics of the respondents constituted of work units positions, age distributions, gender, and level of education and work experience of respondents. Out of the total population size, questions were distributed to 133 respondents, of which 94 (71%) were managerial level, 26(20%) site engineers and the rest 13(9%) are Bole Sub City construction office employees and 129 respondents were returned the questionnaires as summarized in the table 2.

Table 4.2:- Respondents By organizational category, establishment year, experience of using different contract types,

Description of contractor	Total	
	No	%
Organizational category		
Contractor and site Engineer	116	90
Employer	13	10
Total	129	100
Years since establishment		
More than 10	50	*38*
5-10 years	70	*54*
Less than 5 years	9	*8*
Total	129	100
Experience on government projects		
More than 10	50	38
5-10 years	70	54
Less than 5 years	9	8
Total	129	100
Experience of using FIDIC CONTRACT		
Yes	101	78
No	28	22
Total	129	100

Table 4.2. shows that the Organization are categorized based on response formed as 90% of the respondents are contractor and site engineer and the rest 10% are from employee side.

Regarding establishment year of each organization are wise, 38% of contractors established ten years and above, 54% are established from five to ten years and 8% are established less than five years.2. This indicates that the most of the contractor have 5-10 years working experience.

Experience of using FIDIC contract, 78% of the respondents used and using FIDIC contract and the rest 22% are not using the contract type. This implies that Majority of the respondents are using FIDIC contract type and the rest are using PPA contract type.

4.3 Analysis of the Findings of the study

This section is devoted to elaborate and discuss the opinion on the contractors payment delay and its impact on the government construction projects of BSCCO in relation to evaluation of survey group regarding different questions forwarded. Accordingly the tables that follow are deal with the analysis and interpretations of the resulting obtained.

Table4.3:- Implications of Delayed Payment Problems and Its Effect on CCC,(clients side)

	Causes	Very Strongly Implication		Strong Implication		Small Implication		Very Small Implication		No Implication		
No.	Questions	F	%	F	%	F	%	F	%	F	%	
1	Realistic Cost Estimation	20	15.50	68	52.71	3	2.33	20	15.50	18	13.95	3.40
2	Budget Allocation at the Planning stage	70	54.26	21	16.28	10	7.75	12	9.30	16	12.40	3.91
3	Knowing how to overcome the problems of budget Deficient.	30	23.26	61	47.29	18	13.95	10	7.75	10	7.75	3.71
4	Proper Project Costing and Financing	61	47.29	30	23.26	1	0.78	16	12.40	21	16.28	3.73
5	Personnel who are more directly involved in planning and managing	11	8.53	10	62.79	81	7.75	10	7.75	17	13.18	2.91
6	Strong political influence	9	6.98	12	9.30	79	61.24	10	7.75	19	14.73	2.86
	Total											20.51
	Mean average											3.42

Source: (survey result 2020)

Table 4.3:- shows that client's employees response regarding the Implications of Delayed Payment Problems and Its Effect on Contractors, Consultant, Client and other Stakeholders. The employee were

asked the implication of the Realistic Cost Estimation and 52.71% of the responded that Realistic Cost Estimation have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**, 15.50% responded that Realistic Cost Estimation have very strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s,** disagree , 13.95% responded that Realistic Cost Estimation have no implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s** .This result shows that most of the employees agreed that Realistic Cost Estimation have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**.

They were also asked the implications of Budget Allocation at the Planning stage and majority of respondents responded that Budget Allocation at the Planning stage have Very Strong Implication with 54.26**%,** 16.28% strong implication while 7.75% Small Implication and 12.40% No Implication on. Based on the result, delayed Payment Problems have Very Strong Implication on Contractors, Consultant, Client and other Stakeholder**s**.

They were also asked the implications of knowing how to overcome the problems of budget deficient and majority of respondents responded that Knowing how to overcome the problems of budget deficient have Very Strong Implication with 23.26**%,** 47.29% strong implication while 13.95% Small Implication and 7.75% No Implication on. Based on the result, knowing how to overcome the problems of budget deficient have strong implication on delayed Payment Problems have and effects on Contractors, Consultant, Client and other Stakeholder**s**.

The employee were also asked the implication of the Proper Project Costing and Financing and 47.29% of the responded that Proper Project Costing and Financing have very strong implication on Delayed Payment Problems and effects on Contractors, Consultant, Client and other Stakeholder**s**, 23.26% responded that Proper Project Costing and Financing have strong implication on Delayed Payment Problems and Effects on Contractors, Consultant, Client and other Stakeholder**s,** 16.28% responded Proper Project Costing and Financing have no implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s** .This result shows that Proper Project Costing and Financing have very strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s.**

They were also asked the implications of Personnel who are more directly involved in planning and managing and majority of respondents responded that Personnel who are more directly involved in planning and managing have Very Strong Implication with 8.53%**,** 62.79% strong implication .while 7.75 % Small

Implication and 13.18% No Implication on. Based on the result, Personnel who are more directly involved in planning and managing have Very Strong Implication on Contractors, Consultant, Client and other Stakeholder**s.**

Finally they were also asked the implications of Strong political influence and majority of respondents responded that Strong political influence have Very Strong Implication with 6.98%**,** 9.30% strong implication while 61.24% Small Implication and 14.73% No Implication on. Based on the result, Strong political influence have small Implication on Contractors, Consultant, Client and other Stakeholder**s.**

Table 4.4:- Implications of Delayed Payment Problems and Its Effect on CCC, (Consultant side)

	Causes	Very Strongly Implication		Strong Implication		Small Implication		Very Small Implication		No Implication		
No.	Questions	F	%	F	%	F	%	F	%	F	%	
1	Slowdown of the works	13	10.08	10	7.75	13	10.08	70	54.26	23	17.83	2.38
2	Activities of Consultants reduced drastically	20	15.50	24	18.60	60	46.51	11	8.53	14	10.85	3.19
3	Consultants spend longer time than planned	12	9.30	6	4.65	11	8.53	20	15.50	80	62.02	1.84
4	Morally insisting on contractual requirement weaken	40	31.01	65	50.39	15	11.63	4	3.10	5	3.88	3.5
5	Cost of consultancy services increased	17	13.18	12	9.30	75	58.14	10	7.75	15	11.63	3.05
6	Delay in certification	41	31.78	50	38.76	15	11.63	10	7.75	13	10.08	3.74
	Total											15.72
	Mean average											3.93

Table 4.4:- shows that consultant response regarding the Implications of Delayed Payment Problems and Its Effect on Contractors, Consultant, Client and other Stakeholders. The consultant were asked the implication of the Slowdown of the works and 10.08% of the responded that Slowdown of the works have very strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**, 7.75% responded that Slowdown of the works have strong implication on Delayed Payment

Problems and Effect on Contractors, Consultant, Client and other Stakeholders, 10.08% , 54.26% and 17.83% responded that Slowdown of the works have small implication, very small implication and no implication respectively on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders .This result shows that most of the consultant agreed that Slowdown of the works have very small implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders.

They were also asked the implications of Activities of Consultants reduced drastically and majority of respondents responded that Activities of Consultants reduced drastically have Very Strong Implication with 15.50%, 18.60% strong implication while 46.51%, 8.53% and 10.85% responded that Activities of Consultants reduced drastically have small implication, very small implication and no implication respectively Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders . Based on the result, Activities of Consultants reduced drastically have small implication on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

The consultant were also asked the implication of the Consultants spend longer time than planned and 9.30% of the responded that Consultants spend longer time than planned have very strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders, 4.65% responded that Consultants spend longer time than planned have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders, 8.53% , 15.50% and 62.02% responded that Consultants spend longer time than planned have small implication, very small implication and no implication respectively on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders .This result shows that most of the consultant agreed that Consultants spend longer time than planned have no implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders..

The consultant were also asked the implication of the Morally insisting on contractual requirement weaken and 31.01% of the responded that Morally insisting on contractual requirement weaken have very strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders, 50.39% responded that Morally insisting on contractual requirement weaken have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders, 11.63% , 3.10% and 3.88% responded that Morally insisting on contractual requirement weaken have small implication, very small implication and no implication respectively on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders .This result shows that most

of the consultant agreed that Morally insisting on contractual requirement weaken have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**..

They were also asked the implication of the Cost of consultancy services increased and 13.18% of the responded that Cost of consultancy services increased have very strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**, 9.30% responded that Cost of consultancy services increased have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s,** 58.14% , 7.75% and 11.63% responded that Cost of consultancy services increased have small implication, very small implication and no implication respectively on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s** .This result shows that most of the consultant agreed that Cost of consultancy services increased have small implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**

Finally they were also asked the implications of Delay in certification and majority of respondents responded that Delay in certification have Very Strong Implication with 31.78%**,** 38.76% strong implication while 11.63% Small Implication and 10.08% No Implication on. Based on the result, Delay in certification have small Implication on Contractors, Consultant, Client and other Stakeholder**s.**

Table 4.5:- Implications of Delayed Payment Problems and Its Effect on CCC (contractors side).

	Causes	Very Strongly Implication		Strong Implication		Small Implication		Very Small Implication		No Implication		
No.	Questions	F	%	F	%	F	%	F	%	F	%	
1	Contractor's cash flow forecast affected	13	10.08	12	9.30	74	57.36	20	15.50	10	7.75	2.98
2	Increase in construction cost	66	51.16	30	23.26	10	7.75	11	8.53	12	9.30	3.98
3	Payment of Liquidated Damages	41	31.78	55	42.64	18	13.95	9	6.98	6	4.65	3.90
4	Payment of interest on delayed payment does not off-set	10	7.75	10	7.75	9	6.98	70	54.26	30	23.26	2.22
5	Non adherence to site instruction and advice	33	25.58	51	39.53	20	15.50	10	7.75	15	11.63	3.60

6	Scheduling of works or program distracted	58	44.96	41	31.78	19	14.73	7	5.43	4	3.10	4.10
	Total											20.79
	Mean average											3.47

Table 4.5:- shows that contractor's response regarding the Implications of Delayed Payment Problems and Its Effect on Contractors, Consultant, Client and other Stakeholders. The consultant were asked the implication of the Contractor's cash flow forecast affected and 10.08% of the responded that Contractor's cash flow forecast affected have very strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**, 9.30% responded that Contractor's cash flow forecast affected have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s,** 57.36% , 15.50% and 7.75% responded that Contractor's cash flow forecast affected have small implication, very small implication and no implication respectively on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s** .This result shows that most of the contractors agreed that Contractor's cash flow forecast affected have small implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**.

They were also asked the implications of Increase in construction cost and majority of respondents responded that Increase in construction cost have Very Strong Implication with 51.16**%,** 23.26% strong implication while 7.75%, 8.53% and 9.30% responded that Increase in construction cost have small implication, very small implication and no implication respectively Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**. Based on the result, Increase in construction cost have very strong implication on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholder**s**.

The contractor were also asked the implication of the Payment of Liquidated Damages and 31.78% of the responded that Payment of Liquidated Damages have very strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**, 42.64% responded that Payment of Liquidated Damages have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s,** 13.95% , 6.98% and 4.65% responded that Payment of Liquidated Damages have small implication, very small implication and no implication respectively on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s** .This result shows that most of the contractor agreed that Payment of Liquidated Damages have strong

implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**..

The contractors were also asked the Payment of interest on delayed payment does not off-set and 7.75% of the responded that Payment of interest on delayed payment does not off-set have very strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**, 7.75% responded that Payment of interest on delayed payment does not off-set have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s,** 6.98% , 54.26% and 23.26% responded that Payment of interest on delayed payment does not off-set have small implication, very small implication and no implication respectively on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s** .This result shows that most of the contractor agreed that Payment of interest on delayed payment does not off-set have very small implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**..

They were also asked the implication of the Non adherence to site instruction and advice and 25.58% of the responded that Non adherence to site instruction and advice have very strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**, 39.53% responded that Non adherence to site instruction and advice have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s,** 15.50% , 7.75% and 11.63% responded that Non adherence to site instruction and advice have small implication, very small implication and no implication respectively on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s** .This result shows that most of the contractor agreed that Non adherence to site instruction and advice have strong implication on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholder**s**

Finally they were also asked the implications of Scheduling of works or program distracted and majority of respondents responded that Scheduling of works or program distracted have Very Strong Implication with 44.96%**,** 31.78% strong implication while 14.73% Small Implication and 3.10% No Implication on. Based on the result, Scheduling of works or program distracted have very strong Implication on Contractors, Consultant, Client and other Stakeholder**s.**

Table 4.6:-What are effects of delayed payment on CCC (Contractor)

	Effects	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Mean
No.	Questions	F	%	F	%	F	%	F	%	F	%	
1	Create cash flow problems	30	23.26	72	55.81	20	15.50	5	3.88	2	1.55	3.95
2	Force to borrow from financial institutions	15	11.63	20	15.50	80	62.02	7	5.43	7	5.43	3.22
3	Cost overrun of project	88	68.22	20	15.50	5	3.88	4	3.10	12	9.30	4.30
4	Leads to suspension of works	81	62.79	19	14.73	5	3.88	14	10.85	10	7.75	4.14
5	Leads to leaving of projects	91	70.54	10	7.75	20	15.50	4	3.10	4	3.10	4.40
6	Interruption of program of works	81	62.79	20	15.50	6	4.65	13	10.08	9	6.98	4.17
7	Difficult to procure material and services	32	24.81	61	47.29	20	15.50	7	5.43	9	6.98	3.78
	Total											27.96
	Mean average											3.99

Table 4.6:- shows that contractor's response regarding the effects of delayed payment on Contractors Create cash flow problems and Its Effect on Contractors, Consultant, Client and other Stakeholders. The contractor were asked if delayed payment on contractor Creates cash flow problems and 23.26% of the respondent strongly agreed that delayed payment on Contractors Creates cash flow problems, 55.81% respondent agreed that delayed payment on Contractors Create cash flow problems, 15.50% , 3.88% and 1.55% respondent replied neutral, disagree and strongly disagree respectively on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders .This result shows that most of the contractors agreed that delayed payment on Contractors Create cash flow problems on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors Forces to borrow from financial institutions and majority of respondents 11.63%, 15.50%, 62.02%, 5.43%, and 5.43%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors Forces to borrow from financial. Based on the result, most respondents remained neutral that delayed payment on Contractors Forces to borrow from financial institutions on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

The contractor were also asked that delayed payment on Contractors cause Cost overrun of project and 68.22% of the respondent strongly agree that delayed payment on Contractors cause Cost overrun of project, 15.50% respondent agree that delayed payment on Contractors cause Cost overrun of project, 3.88% , 3.10% and 9.30% respondent replied neutral, strongly disagree and disagree that delayed payment on Contractors cause Cost overrun of on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders. This result shows that most of the contractor strongly agree that delayed payment on Contractors cause Cost overrun on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors Leads to suspension of works and majority of respondents 62.79%, 14.73%, 3.88%, 10.85%, and 7.75%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors Leads to suspension of works. Based on the result, most respondents strongly agree that delayed payment on Contractors Leads to suspension of works on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors Leads to leaving of projects and majority of respondents 70.54%, 15.50%, 4.65%, 3.10%, and 3.10%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors Leads to leaving of projects. Based on the result, most respondents strongly agree that delayed payment on Contractors Leads to leaving of projects on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors Interruption of program of works and majority of respondents 62.79%, 15.50%, 4.65%, 10.08%, and 6.98%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors Interruption of program of works. Based on the result, most respondents strongly agree that delayed payment on Contractors Interruption of program of works on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

Finally they were also asked that delayed payment on Contractors face Difficult to procure material and services and majority of respondents 24.81%, 47.29%, 15.50%, 5.43%, and 6.98%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors face Difficult to procure material and services. Based on the result, most respondents strongly agree that delayed payment on Contractors face Difficult to procure material and services on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

Table 4.7: what are effects of delayed payment on CCC? (Consultant side)

	Effects	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Mean
No.	Questions	F	%	F	%	F	%	F	%	F	%	
1	Idleness of Consulting Staff	29	22.48	60	46.51	19	14.73	15	11.63	6	4.65	3.71
2	Unable to render the intended consultancy service, affect quality of consultancy services	65	50.39	25	19.38	12	9.30	12	9.30	15	11.63	3.88
3	Improper communication with Contractor	39	30.23	61	47.29	15	11.63	8	6.20	6	4.65	3.92
4	Conflict among the contracting parties	38	29.46	66	51.16	9	6.98	7	5.43	9	6.98	3.91
5	Project Administration will be hampered	89	68.99	20	15.50	10	7.75	6	4.65	4	3.10	4.43
6	Decline in interest of Consultant's staff to supervise the project works at full scale	20	15.50	81	62.79	9	6.98	11	8.53	8	6.20	3.73
	Total											23.57
	Mean average											3.93

Table 4.7:- shows that consultant response regarding the effects of delayed payment on Contractors due to Idleness of Consulting Staff and Its Effect on Contractors, Consultant, Client and other Stakeholders. The consultant were asked if delayed payment on contractor due to idleness of Consulting Staff and 22.48% of the respondent strongly agreed that delayed payment on Contractors due to idleness of Consulting Staff, 46.51% respondent agreed that delayed payment on Contractors Idleness of Consulting Staff, 14.73% , 11.63% and 4.65% respondent replied neutral, disagree and strongly disagree respectively on Delayed

Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders .This result shows that most of the consultant agreed that payments delayed on Contractors due to idleness of Consulting Staff on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors due to Unable to render the intended consultancy service, affect quality of consultancy services and majority of respondents 50.39%, 19.38%, 9.30%, 9.30%, and 11.63%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors due to Unable to render the intended consultancy service, affect quality of consultancy services. Based on the result, most respondents strongly agree that delayed payment on Contractors due to Unable to render the intended consultancy service, affect quality of consultancy services on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

The contractor were also asked that cause of delayed payment on Contractors due to Improper communication with Contractor and 30.23% of the respondent strongly agree that delayed payment on Contractors Improper communication with Contractor, 47.29% respondent agree that delayed payment on Improper communication with Contractor, 11.63% , 6.20% and 4.65% respondent replied neutral, strongly disagree and disagree that delayed payment on Contractors Improper communication with Contractor and Effect on Contractors, Consultant, Client and other Stakeholders. This result shows that most of the consultant agree that delayed payment on Contractors caused due to improper communication with Contractor and Effect on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors cause Conflict among the contracting parties and majority of respondents 29.46%, 51.16%, 6.98%, 5.43%, and 6.98%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors cause Conflict among the contracting parties. Based on the result, most respondents agree that delayed payment on Contractors cause Conflict among the contracting parties on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors Project Administration will be hampered or not and majority of respondents 68.99%, 15.50%, 7.75%, 3.10%, and 3.10%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors Project Administration will be hampered. Based on the result, most respondents strongly agree that delayed payment on Contractors Project Administration will be hampered on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

Finally they were also asked that delayed payment on Contractors Decline in interest of Consultant's staff to supervise the project works at full scale and services and majority of respondents 15.50%, 62.79%, 6.98%, 8.53%, and 6.20%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors Decline in interest of Consultant's staff to supervise the project works at full scale. Based on the result, most respondents agree that delayed payment on Contractors cause Decline in interest of Consultant's staff to supervise the project works at full scale on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

Table 4.8:- What are effects of delayed payment on CCC (Employee side)

	Effects	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Mean
No.	Questions	F	%	F	%	F	%	F	%	F	%	
1	Unplanned Government money is paid to the Contractor	30	23.26	29	22.48	62	48.06	5	3.88	3	2.33	3.60
2	Working Environment will be affected	12	9.30	24	18.60	50	38.76	23	17.83	20	15.50	2.88
3	Conflict among the contracting parties	37	28.68	64	49.61	8	6.20	15	11.63	5	3.88	3.88
4	Possibility of disrupt Contractors	31	24.03	35	27.13	44	34.11	6	4.65	13	10.08	3.50
5	Means of overcoming budget deficit	29	22.48	72	55.81	15	11.63	8	6.20	5	3.88	3.87
6	Idleness of personnel who are responsible for the project	18	13.95	23	17.83	70	54.26	7	5.43	11	8.53	3.23
	Total											20.97
	Mean average											3.49

Table 4.8 shows that employee response regarding the effects of delayed payment on Contractors due to Unplanned Government money is paid to the Contractor and Its Effect on Contractors, Consultant, Client and other Stakeholders. The employee were asked if delayed payment on contractor due to Unplanned Government money is paid to the Contractor and 23.26% of the respondent strongly agreed that delayed payment on Contractors due to idleness of Consulting Staff, 22.48% respondent agreed that delayed payment on Contractors Unplanned Government money is paid to the Contractor, 48.06% , 3.88% and 2.33% respondent replied neutral, disagree and strongly disagree respectively on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders .This result shows that most of the employee remains neutral on payments delayed on Contractors due to Unplanned Government money is paid to the Contractor on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors due to Conflict among the contracting parties and majority of respondents 28.68%, 49.61%, 6.20%, 11.63%, and 3.88%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors due to Conflict among the contracting parties. Based on the result, most respondents agreed on delayed payment on Contractors due to Conflict among the contracting parties on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

The employee were also asked that cause of delayed payment on Contractors due to Possibility of disrupt Contractors and 24.03% of the respondent strongly agree that delayed payment on Contractors Possibility of disrupt Contractors, 27.13% respondent agree that delayed payment on Possibility of disrupt Contractors 34.11% , 4.65% and 10.08% respondent replied neutral, strongly disagree and disagree that delayed payment on Contractors Improper communication with Contractor and Effect on Contractors, Consultant, Client and other Stakeholders. This result shows that most of the employee remain neutral on delayed payment on Contractors caused due to Possibility of disrupt Contractors and Effect on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors cause Means of overcoming budget deficit and majority of respondents 22.48%, 55.81%, 11.63%, 6.20%, and 3.88%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors cause Means of overcoming budget deficit. Based on the result, most respondents agree that delayed payment on Contractors cause Means of overcoming budget deficit on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

Finally they were also asked that delayed payment on Contractors cause Idleness of personnel who are responsible for the project and majority of respondents responded that, 13.95%, 17.83%, 54.26%, 5.43%, and 8.53%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors Idleness of personnel who are responsible for the project. Based on the result, most respondents remains neutral that delayed payment on Contractors cause Idleness of personnel who are responsible for the project on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

Table 4.9 options available and strategic methods to improve cash flow forecasting of CCC

	Reasons why most of local Contractors do not request late interest payment	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Mean
No.	Questions	F	%	F	%	F	%	F	%	F	%	
1	Reliable work Program/Healthy cash flow	28	21.71	69	53.49	20	15.50	7	5.43	5	3.88	3.84
2	Payment of interest on delayed payment is not included in the contract provisions,	23	17.83	20	15.50	54	41.86	11	8.53	21	16.28	3.10
3	There is no defined time frame for payment, in the contract	40	31.01	61	47.29	11	8.53	12	9.30	5	3.88	3.92
4	Employer is working within stipulated budget	28	21.71	43	33.33	36	27.91	10	7.75	12	9.30	3.50
5	Local Contractors are not facing cash flow problem to run the project	5	3.88	7	5.43	71	55.04	15	11.63	31	24.03	2.53
6	Unable to know and exercise the right Vested under the contract.	16	12.40	24	18.60	69	53.49	12	9.30	8	6.20	3.22
7	Government is supplying local Contractor with chippings, iron rods. And cement on credit	15	11.63	81	62.79	17	13.18	7	5.43	9	6.98	3.67
	Total											23.78
	Mean average											3.40

Table 4.9 shows that CCC response regarding the Options Available and Strategic Methods to Improve Cash Flow Forecasting Reliable work Program/Healthy cash flow and Its Effect on CCC and other Stakeholders. The CCC were asked if Options Available and Strategic Methods to Improve Cash Flow to Forecasting Reliable work Program/Healthy cash flow and 21.71% of the respondent strongly agreed that Forecasting Reliable work Program/Healthy cash flow, 53.49% respondent agreed that delayed payment on Contractors Reliable work Program/Healthy cash flow, 15.50% , 5.43% and 3.88% respondent replied neutral, disagree and strongly disagree respectively on Delayed Payment Problems and Effect on CCC and other Stakeholders. This result shows that most of the CCC agreed that Forecasting Reliable work Program/Healthy cash flows are Options Available and Strategic Methods to Improve Cash Flow.

They were also asked that Options Available and Strategic Methods to Improve Cash Flow cause Payment of interest on delayed payment which is not included in the contract provisions and majority of respondents 17.83%, 15.50%, 41.86%, 8.53%, and 16.28%, strongly agree, agree, neutral, and strongly disagree respectively that Payment of interest on delayed payment which is not included in the contract provisions. Based on the result, most respondents remained neutral that Options Available and Strategic Methods to Improve Cash Flow cause Payment of interest on delayed payment which is not included in the contract provisions on delayed Payment Problems on CCC and other Stakeholders.

The CCC were also asked that Options Available and Strategic Methods to Improve Cash Flow Forecasting that if there is no defined time frame for payment, in the contract and 31.01% of the respondent strongly agree that delayed payment on Contractors cause Cost overrun of project, 47.29% respondent agree that Options Available and Strategic Methods to Improve Cash Flow Forecasting and if there is no defined time frame for payment, in the contract, 8.53% , 9.30% and 3.88% respondent replied neutral, strongly disagree and disagree that delayed payment on Contractors cause Cost overrun of on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders. This result shows that most of the contractor strongly agree that delayed payment on Contractors cause there is no defined time frame for payment, in the contract on Delayed Payment Problems and Effect on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors Leads to suspension of works and majority of respondents 62.79%, 14.73%, 3.88%, 10.85%, and 7.75%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors Leads to suspension of works. Based on the result, most respondents strongly agree that delayed payment on Contractors Leads to suspension of works on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors Leads to leaving of projects and majority of respondents 70.54%, 15.50%, 4.65%, 3.10%, and 3.10%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors Leads to leaving of projects. Based on the result, most respondents strongly agree that delayed payment on Contractors Leads to leaving of projects on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

They were also asked that delayed payment on Contractors Interruption of program of works and majority of respondents 62.79%, 15.50%, 4.65%, 10.08%, and 6.98%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors Interruption of program of works. Based on the result, most respondents strongly agree that delayed payment on Contractors Interruption of program of works on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

Finally they were also asked that delayed payment on Contractors face Difficult to procure material and services and majority of respondents 24.81%, 47.29%, 15.50%, 5.43%, and 6.98%, strongly agree, agree, neutral, and strongly disagree respectively that delayed payment on Contractors face Difficult to procure material and services. Based on the result, most respondents strongly agree that delayed payment on Contractors face Difficult to procure material and services on delayed Payment Problems on Contractors, Consultant, Client and other Stakeholders.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

This chapter includes the conclusions and recommendations that would help in solving the cause and effects of delay in Contractor's payment in the case of construction projects administered under Bole Sub city Construction Office.

5.1Conclusions

1. The major effects of contractor's payment delay on construction projects administered under BSCCO are; Turnover of personnel both from supervision and construction, delay in progress of the physical works, bad communication with the project staff, compromising quality in construction works, increase in frequency of workmanship problems, insufficient resource arrangements, unable to comply Environmental, Health, Safety and Social Management requirements, problem in connection with sub-contract administration, and increase in construction and supervision cost of project are major effects of contractor's payment delay .

2. The major causes of budget constraints for construction projects under BSCCO are;

- ✓ Budget allocated by the client is lower than the actual performance of the Contractor.
- ✓ Professionals working at Planning and Program and Implementation directorate have not properly planned and allocated fiscal year budget, and lacked proper information about the performance of Contractors and resource allocated on the project site.
- ✓ Proper Budgets must be allocated at the planning stage of the projects

3. The effective options available and strategic methods to be developed by Contractors to improve their cash flow forecasting are;

- ✓ Following defined time frame for payment,
- ✓ Establishing the client's credit worthiness,
- ✓ Regular periodic payment, and Reliable
- ✓ Giving local contractor chipping materials to
- ✓ Negotiating the terms strictly,
- ✓ Ensuring pricing the job accurately, and
- ✓ Entering into partnership agreement.

4. The major reason why most of local Contractors working with BSCCCO have no experience of requesting late interest payment for delayed payment are;

- ✓ fear of the negative impact on communication between the Contactor and Client,

- ✓ Inability to know and exercise the right vested under the contract, and
- ✓ Contractors' consideration to claim the loss due to delay in payment in other heads of claims.

5. Late interest payment amount collected by contractors' do not commensurate the loss the
   - ✓ Contractor incurs due to delay in their payment.

5.2Recommendations

Some recommendations are presented for decision makers in the construction sector to support the results of this study:

- ➢ The planning and program team shall have sufficient information to determine fiscal year budget for projects.
- ➢ Budget utilization status of every project shall be checked by the planning and program management directorate in collaboration with the implementation management directorates so that budget adjustment construction projects shall be made as required.
- ➢ Allocating budget, contractor's past performance and features of project shall be taken into consideration.
- ➢ The client should work on maximizing the efficiency of quality of design and accurate project pricing so that unplanned additional works would be controlled.
- ➢ The client should pay progress payment to the contractor on time due to the fact that delay in payment hampers the contractor's ability to finance the work.
- ➢ Contractors are recommended to have stable business background and good relation with the financial institution to have stable cash flow before beginning in any project
- ➢ Contractors are better to work with other firms and outsource some of the activities so that effects of delay in Contractor's payment could be minimized.
- ➢ Consultants should review and approve design documents, shop drawings, and the payments schedule of contractor to avoid any delay or cost overruns at the project.
- ➢ Late interest payment provisions of contract shall be drafted by the client taking the country's banking sectors (private and government financial sectors) lending rate into account.
- ➢ As a large government institution, BSCCO needs to establish a system to facilitate means of obtaining loans from financial institutions, in case there is shortage of budget.

- Contractors shall have sufficient information about the project site and thoroughly understand the provisions of tender documents and design documents before tendering in order to enable him offer reasonable price for a job.

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APPENDIX A

Questionnaire

As part of my MBA. Study in Project Management at St.Marry University, I am undertaking a research on the title "**Contractor's Payment Delay and Its Impact on Government Construction Projects In the case of Bole Sub City Construction office.**".

The main objectives of the study are:

- To establish the implications of delayed payment problems and its effect on government construction Contractor under the Bole Sub City Construction office;
- To identify the major causes of budget constraints for road projects Bole Sub City Construction office.
- To identify effective options available and strategic methods developed by Contractors to improve their cash flow forecasting; and
- To identify the reason why most of local Contractors working with Bole Sub City Construction office have not requested late interest payment for delayed payment
- To confirm whether late interest payment is equivalent to the time value of money that the Contractors actually miss due to delayed payment.
- To confirm as to how delay in Contractor's payment result inadequate equipment holding, late completion of projects, poor quality works, unemployment, increase of total project cost, disputes, liquidation of construction firms and loss of productivity.

I have developed this questionnaire to collect views of professionals working for employer, contractors and consultants for completeness of my research. It is my belief that the research, in addition to its academic significance, will have a practical significance for the development of the government construction sector in Ethiopia and initiates further research on the topic.

Your response, in this regard, is highly valuable and contributory to the outcome of the research.

All feedback will be kept strictly confidential, and utilized for this academic research only.

Best Regards,

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MBA Thesis: Contractor's Payment Delay and Its Impact on Government Construction Projects In the case of Bole Sub City Construction office.

SECTION- A

General Background Information

The questions below are related to your organization and yourself. Please indicate your response by ticking (X or □) the appropriate box (es) or by filling the blank spaces provided, as appropriate.

1.1 *Name of organization (Optional)*: _____

1.2 To which one of the parties is your organization categorized:

Employer ☐ Contractor ☐ Consultant ☐

1.3 Years since establishment:

More than 10 years ☐ 5-10 years ☐ Less than 5 years ☐

1.4 The organization's experience in government construction projects in Addis Ababa government projects

More than 10 years ☐ 5-10 years ☐ Less than 5 years ☐

1.5 Your experience on government projects:

More than 10 years ☐ 5-10 years ☐ Less than 5 years ☐

1.6 Do you have experience in projects using FIDIC 1987/1992 (Red book) as the Conditions of the Contract?

Yes ☐ No ☐

1.8 Do you have experience in projects using PPA 2006 as conditions of Contract?

Yes ☐ No ☐

1.9 Your Name, Title and Contact address:

□ Name (optional): _____

□ Job Title: _____

□ Tel (optional): _____

□ E-mail address: _____

SECTION-B

Establish the Various Implications of Delayed Payment Problems and Its Effect on

Contractors, Consultant, Client and other Stakeholders

Objective of the Questions: To establish the various implications of delayed payment problems and its effects on Contractors working with Bole Sub City Construction office and other stakeholders

Please, tick and fill in the blanks if you select other.

Each scale represents the following rating: (5) = Very Strongly Implication, (4) = Strong Implication, (3) = Small Implication, (2) = Very Small Implication, (1) = No Implication

Question: State the level at which you agree with the following issues and how it affects delayed payment.

		scale				
Category	Causes	1	2	3	4	5
1.Employer	Realistic Cost Estimation					
	Budget Allocation at the Planning stage					
	Knowing how to overcome the problems of budget Deficient.					
	Proper Project Costing and Financing					
	Personnel who are more directly involved in planning and managing					
	Strong political influence					
2.Consultant	Slowdown of the works					
	Activities of Consultants reduced drastically					
	Consultants spend longer time than planned					
	Morally insisting on contractual requirement weaken					
	Cost of consultancy services increased					
	Delay in certification					
3.Contractor	Contractor's cash flow forecast affected					
	Increase in construction cost					

	Payment of Liquidated Damages					
	Payment of interest on delayed payment does not off-set					
	Non adherence to site instruction and advice					
	Scheduling of works or program distracted					

Section c

Effects of Delayed Payment of Contractor's

Objective of the Questions**:** To establish the various causes/implications of delayed payment problems of Contractors working with Bole sub city construction office and other stakeholders please, tick and fill in the blanks if you select others.

Each scale represents the following rating: (5) = Strongly Agree, (4) = Agree, (3) = Neutral, (2) = Disagree, (1) = Strongly Disagree

Question: What are effects of delayed payment on Contractors/other stakeholders?

Category	Effects		scale			
		1	2	3	4	5
1.Contractor	Create cash flow problems					
	Force to borrow from financial institutions					
	Cost overrun of project					
	Leads to suspension of works					
	Leads to leaving of projects					
	Interruption of program of works					
	Difficult to procure material and services					
2.Cosultant	Idleness of Consulting Staff					
	Unable to render the intended consultancy					

	service, affect quality of consultancy services					
	Improper communication with Contractor					
	Conflict among the contracting parties					
	Project Administration will be hampered					
	Decline in interest of Consultant's staff to supervise the project works at full scale					
3.Employee	Unplanned Government money is paid to the Contractor					
	Working Environment will be affected					
	Conflict among the contracting parties					
	Possibility of disrupt Contractors					
	Means of overcoming budget deficit					
	Idleness of personnel who are responsible for the project					

SECTION D

Options Available and Strategic Methods to Improve Cash Flow Forecasting

Objective of the questions: To identify effective options available and strategic methods developed by Contractors to improve their cash flow forecasting. Each scale represents the following rating: (5) = Very important, (4) = Important, (3) = Neutral, (2) = Not important, (1) =

Not very important

Questions*:* What are the options available and strategic methods to improve cash flow forecasting?

Category	*Reasons why most of local Contractors do not request late interest payment*		scale			
		1	2	3	4	5
Client/ Contractor/	Reliable work Program/Healthy cash flow					

Consultant						
	Payment of interest on delayed payment is not included in the contract provisions,					
	There is no defined time frame for payment, in the contract					
	Employer is working within stipulated budget					
	Local Contractors are not facing cash flow problem to run the project					
	Unable to know and exercise the right Vested under the contract.					
	Government is supplying local Contractor with chippings, iron rods, bitumen and cement on credit					

1.1. Other comments you may forward with regard to the subject matter_____
_____
_____
_____

_____The End_____

Thank you

APPENDIX B

Research Advisor sample size table

Required sample size

Population Size	Confidence = 95% Margin of Error				Confidence = 99% Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1178	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586

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