

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI, GHANA**

**Constraints in Contract Claims in the Ghanaian Construction Industry: Study in the
Western region**

by

Thomas Amankwatia Essuman (BSc Quantity Surveying and Construction Economics)

**A Thesis Presented to the Department of Building Technology, College of Art and Built
Environment, in partial fulfilment of the requirements for a degree of**

MASTER OF SCIENCE

November, 2016

DECLARATION

I hereby declare that this submission is my own work towards the MSc Procurement management and that, to the best of my knowledge, it contains no material previously published by another person, nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

Thomas Amankwatia Essuman (PG3585215)

(Student)

.....

(Signature)

.....

(Date)

Certified by:

Rev. Prof. Frank D.K. Fugar

(SUPERVISOR)

.....

(Signature)

.....

(Date)

Certified by:

Dr. Theophilus Adjei-Kumi

(Head of Department)

.....

(Signature)

.....

(Date)

ABSTRACT

The competitive bidding system forces contractors to price their work in a way that will give them the best opportunity to be the lowest bidder. Sometimes, too much attention is placed on getting the work and not enough attention is given to how the work can be done profitably. From the scope and objectives of the study, different tests have been conducted and the procedure used for this is the quantitative method through questionnaire. This was to solicit the experience of qualified personnel on site to identify the constraints in the construction contract claims in the Ghanaian construction industry. This case study, questionnaire was developed for the contractors who are registered to the Ministry of Water Resource Works and Housing classified under financial class D1K1, D2K2. The study was limited to contractors working in the Western region. It was revealed that almost all the contractors' questionnaire used the standard condition of contract (P.P.A) Public Procurement Authority. On the part of dispute resolution mediation was ranked first with expedient and litigation last with 1.5 percent. About eighty percent (80%) always notify the clients when they identify claims by writing while less than five percent (5%) communicate to the clients through telephone communication. It was shown that contractors who purchase contract document bid for contract work or project do not study the content of the document. This has given way for some of the client to argue their way out which leads to constraint on the part of the contractor. Documentation was also one of the major problems which bring about constraint, most of the contractors do not keep proper documents of failed activities when there are variations, valuation or any type of claims. To put in justifiable claims, to avoid constraints or misunderstanding between the client and the contractor, documentation is the key. To avoid constraints in the construction contract claim documents must be prepared by competent persons. The public procurement board should come out with a standard procedure administering claims and specifying days that the client should respond to notification of claims to avoid misunderstanding and conflict on site.

TABLE OF CONTENT

DECLARATION	ii
ABSTRACT	iii
TABLE OF CONTENT	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
ACKNOWLEDGEMENT	ix
DEDICATION	x
CHAPTER ONE	1
INTRODUCTION	1
1.1 BACKGROUND TO THE STUDY	1
1.2 STATEMENT OF THE PROBLEM.....	3
1.3 AIM OF THE STUDY.....	4
1.4 OBJECTIVE OF THE STUDY.....	4
1.5 RESEARCH METHODOLOGY.....	4
1.6 SIGNIFICANCE OF THE STUDY.....	5
1.7 SCOPE OF THE STUDY	6
1.8 ORGANISATION OF THE STUDY	6
CHAPTER TWO	8
LITERATURE REVIEW	8
2.1 INTRODUCTION	8
2.2 CONTRACTUAL CLAIMS.....	10
2.3 EX- CONTRACTUAL CLAIMS	10
2.4 COMMON LAW CLAIMS	11
2.5 EVENTS THAT GIVE RISE TO CLAIMS	11
2.6 TYPES OF CONTRACTUAL CLAIMS	12
2.7 CLAIMS CONCERNING DELAYS AND DISRUPTION	13
2.8 CLAIMS CONCERNING THE EXECUTION OF WORKS	14
2.9 DETERMING PERIOD OF DELAYS/ DISRUPTION/ ACCELERATION	15

2.10 CONDITIONS OF CONTRACT PROVISIONS FOR CLAIMS	15
2.11 PREPARATION OF CLAIMS	15
2.11.1 SELECTION OF CONTRACT CLAUSES AND GIVEN NOTICE.....	16
2.12 FOUNDATION FOR SUCCESSFUL CLAIMS	16
2.12.1 INFORMATION REQUIRED TO SUPPORT CLAIMS	17
2.13 CONSTRUCTION CLAIM DOCUMENTATION.....	19
2.14 DOCUMENTS SIGNIFICANT TO CLAIMS	19
2.15 ESSENTIAL REQUIREMENT IN CLAIM PREPARATION	20
2.16 PRESENTATION OF CLAIMS.....	20
CHAPTER THREE.....	22
RESEARCH METHODOLOGY	22
3.1 INTRODUCTION	22
3.2 EXPERIENCE STAKEHOLDER FOR THE SURVERY	22
3.2.1 DATA COLLECTION	23
3.3 QUESTIONNAIRE STRUCTURE.....	23
3.4 DESIGN QUESTIONNAIRE.....	24
3.5 DESIGN OF SURVEY	24
3.6 DETERMINATION OF SAMPLE USING	25
3.7 THE LEVEL OF PRECISION	27
3.8 SUMMARY.....	27
CHAPTER FOUR	28
PRESENTATION AND DISCUSSION OF RESULTS.....	28
4.1 INTRODUCTION	28
4.2 BACKGROUND INFORMATION	28
4.3 ANNUAL TURNOVER.....	29
4.4 FORM OF CONDITION OF CONTRACT	30
4.5 CLAIM MANAGEMENT AND ADMINISTRATION.....	31
4.6 ASSISTANCE IN THE PREPARATION AND ADMINISTRATION OF CONTRACTUAL CLAIMS.....	32

4.7 NATURE OF FIRMS INTERVIEWED.....	32
4.8 IDENTIFICATION AND NOTIFICATION AND PERIODS	33
4.9 PREPARATION OF CONTRACTUAL CLAIMS AND CAUSE FOR CONTRACTUAL CLAIMS.....	34
4.10 NOTIFICATION AND PERIODS	36
4.11 STEPS INVOLVED IN THE PREPARATION OF CONTRACTUAL CLAIMS...	36
4.12 THINGS THAT HINDER ADMINISTRATION OF CONTRACTUAL CLAIMS.	37
4.13 METHODS OF RESOLVING CLAIMS DISPUTE.....	37
4.14 CAUSES AND IMPLICATION OF CONSTRAINTS IN CONSTRUCTION CLAIMS	38
CHAPTER FIVE	40
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMEDATION	40
5.1 INTRODUCTION	40
5.2 SUMMARY OF FINDINGS	40
5.3 CONCLUTIONS	41
5.3 RECOMMENDATION	41
REFERENCE.....	43
APPENDIX.....	48

LIST OF TABLES

Table 3.1: Population and Sample Size	26
Table 3.2: A Questionnaire Totaling Table	27
Table 4.1: Causes for Contractual Claims	35
Table 4.2: Statistics on important steps in preparing Contractual Claim	36

LIST OF FIGURES

Figure 4.1: Percentage of professional Bodies in the construction industry which responded to the questionnaire.	29
Figure 4.2: Annual Volume of Work.....	30
Figure 4.3: Form of Condition of Contract.....	30
Figure 4.4: Years of Experience of Respondents	31
Figure 4.5: Assistance in the Preparation and Administration	32
Figure 4.6: Firms Activities.....	33
Figure 4.7: How Claims are Substantiated	34
Figure 4.8: Rank of Dispute Resolution Methods in Resolving Claim Dispute.....	38

ACKNOWLEDGEMENT

First and foremost, my most grateful thanks goes to the Alpha and Omega for guiding and helping me in the completion of the program and to the extent of this thesis.

I would also like to extend my deepest gratitude and appreciation to my Supervisor, Rev. Prof. Frank Fugar and Mr. P. Amoah for their continuous encouragement and guidance, support and valuable advices throughout the period of this thesis.

I would also like to thank all the respondents who participated in the questionnaire survey and also to those who were involved directly or indirectly in the completion of this thesis.

I would further thank Peter Kwame Essuman my brother and Kwame Opoku my brother's son, for their time spent in typing, love, encouragement and support, and also to my family their belief in me that with God all things are possible and "YES I CAN."

Lastly but not the least, I would like to extend my gratitude and appreciation to all the lecturer and all the 2015 – 2016 MSc Procurement Management classmate for the grand success.

DEDICATION

To my beloved children Esi Dankwaa, Esi Benewaah, Ama Nuamah Essuman, Esi Kyiewah Essuman, Kofi Amankwatai Essuman, Veronica Afful my wife, and my brother and the entire family. My heartfelt appreciation to all my lecturers and my office staff who in divers' ways assisted me in making this thesis a reality.

Thanks for all the love and encouragement.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Almost all construction projects for the government of Ghana are ended in claims. Claim is the seeking of consideration of change by one of the parties involved in the construction process.

Constraints are defined as anything that limits a system from attaining higher performance towards its goals. Within any construction project, a successful conclusion involves not only completion of the requisite work, but doing so within the time specified with budget and to the required technical standards (Singh et al 2006).

Construction projects have become more complex and require greater investment, they have taken on added commercial importance (Surawongsin 2002).The idea of delay and constraint within projects is well known and is often the subject of litigation (Williams 2002).Smith (2012) has noted therefore that there is a clean need for method of qualifying the cost and time effects of constraints to be developed and for such quantification methods to be used in claims by contractors’

There are several document that shows the order of magnitude of the effect from construction claims on cost and time of the projects. This is the fact that even if the time that workers must remain off site, are prevented from working at all due to constraints is easily measurable, the reduced productivity of workers after such periods can be missed completely (Pickavance 2005).

Despite these difficulties of qualification, it is also evident that the size and complexity of many construction projects today also means variation in design, techniques necessary to allow for the flexibility of dealing with Gould (2004), has noted the challenges that it causes to the industry.

It was found that the large majority of claims involve some delays as stated above and in a number of cases delays exceeded the original contract duration by over 100% Amoah, and Osei-Asibey (2010). The projects costs more than half of the claims were the additional cost of at least 30% of the original contract sum.

With significant amount of effort being put into developing standard form contracts methods of calculating the actual cost of constraints and greater degrees of consensus between the contractor and the employee so as to avoid conflicts later on (Pickavance,2005).There has been an increase in the concern of contractors for the efficacy and success of their disruption claims. There are steps that contractors can take to ensure that they are in a strong position as possible when it comes to making a disruption claims. These steps will ensure that all relevant losses are covered for in the disruption clause of the contract and that contractors keep track of the relevant documentation and data during a project that will allow them to substantiate their claims out of constraints (Smith 2012).

1.2 STATEMENT OF THE PROBLEM

As in nearly all construction projects, several contractors are engaged in the project. This includes; architects, structure engineering group, and designers along with the building contractor. The building contractor manages a number of other sub-contractors, who are all majoring in an area. This can comprise carpentry, steel work, Electrical work, floor grinding work, (Chouichien and Touhaiwat, 2006). Construction is a high risk business, it is normally carried out on a particular site for a purpose. Different operational skill and site conditions either foreseeable or unforeseeable can lead to additional cost not provided for in the initial estimate, (Singh, 2006; Assaf and Alheji, 2006). In addition changes in scope and/or delay or disruption could lead to loss or expense, now coming down to real situation in Ghana as opened opined by Badu and Amoah (2004). We have more contractors chasing fewer jobs. In their desperation and strive for jobs tend to underprice in order to be awarded contracts. More so the only means for constructors to attempt to recoup some of these losses due to competition is through claims (Bunny, 2003; Kim and Davis, 2008).

In all the main objective of every contractor is to complete a project within cost and at a stipulated time to the required quantity and at a maximum profit is almost becoming a mirage as an informal search show that Ghanaian construction firms are not litigants and in most cases do not claim what is legitimately theirs under a contract thereby leaving at the mercy of consultants.

The challenges related to construction in developing countries is not drastically different as compared to that in Ghana. A study was conducted by Eyiah and Cook (2003) to ascertain the financing need and constraints of contractors. Hence there is the need to conduct a

formal research into the constraints in which the contractors go through. The contractors can be aware that their action and inaction can become claims. There is therefore the need to changes attitudes, behavior and procedures in order to decrease claims in the construction industry in Ghana.

1.3 AIM OF THE STUDY

This study is aimed to identify the constraints that Ghanaian contractors go through before getting their claims.

1.4 OBJECTIVE OF THE STUDY.

- I. To ascertain the major causes of claims in the Ghanaian Construction Industry.
- II. To ascertain the significant factors that hinder proper preparation of contractual claims.
- III. To identify the procedure for the proper preparation and administration of good construction contractual claims by Ghanaian Building contractors.

1.5 RESEARCH METHODOLOGY

The study will involve various semi-structured dialogues with the project managers, site managers' and quantity surveyors on the construction projects; plan and day work register will also be employed for analysis. Touring the site will allow for a reliable knowledge of the situation and by this means contribute to the collection of data. The data to be collected will be based on the structured questionnaire and among other things seek information on:

- The type of construction contractors in the metropolis.
- The level of knowledge and practice in relation to construction contract claims
- The procedure adopted in making contract claims.

Information of construction from the interview and project documents will be used to identify the problem and necessary condition in the project. This would enable the researcher relate findings with the available literature and drawn conclusions. The final phase of the study is to define the conclusion and recommendation with reference to the objectives and analysis from the questionnaire (Bintil 2008). A path chart will be used to illustrate the flow of information and graphical, hierarchical representation of systems given at goals, critical success factors and necessary conditions (Dettmer 2011). This chapter will also describe all procedure that were followed to achieve the objective set for this study. The procedure adopted including all information that will be important to the data. Where those data were obtained and how they were obtained is the method that is used to obtain the path chart. The study depends crucially on the proper selection and implementation of the research methods.

1.6 SIGNIFICANCE OF THE STUDY

There are no documented proofs that Ghanaian construction firms, subcontractors and other members are litigants. This research is significant because it is to come out with all problems that are hampering the construction industry on claims. It is to bring out all associated causes and make things simple for both the contractors and client. Whether rumor

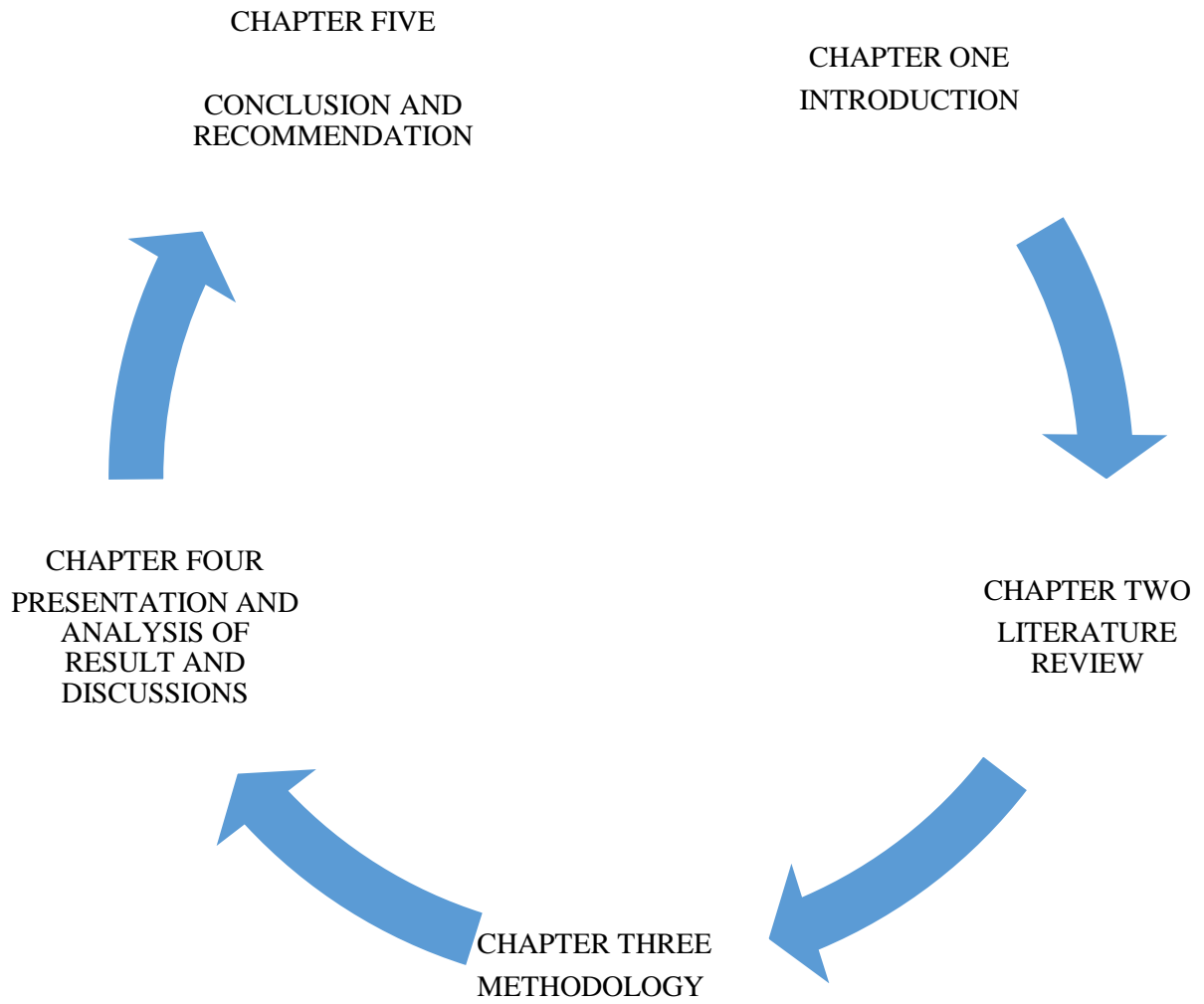
or truth we need to ascertain the property documentation and also the level of degree in the knowledge concerning contractual claims.

1.7 SCOPE OF THE STUDY

This research focuses on the constraints in Construction Contract Claims encounter by construction practitioners in the Western Region of Ghana with study sample from preparation of construction contractors across the metropolitan township.

1.8 ORGANISATION OF THE STUDY

The introduction which consists of the background of studying is in Chapter one. Problem statement, research question and research objective, significance of the study, scope of the study, limitations and definition of terms. Chapter two: will also deal with literature review of the terms or theories of the project which are associated with this research. Chapter three: will deal with methodology of the study both qualitative and quantitative methods that will be used in the study. The chapter four will deal with presentations and analysis of the data and the research outcome. The fifth chapter contains the conclusion of the study, recommendations and suggestions organization of the research work.



CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Decades have gone by but which there has been a huge number of industry appellation concerning the connection amongst the construction industry and disbursement of money. Payment (money) is deemed as an engine of the construction industry since construction involves huge money as well as acquire a significant time to finish. The contractor receives payment either when he has substantially completed the works or according to the payment schedule. This is notably so with the medium and big sized constructors or once the work involves a whole lot of cedi. Contractors should have certain mode of regular or periodic monetary inoculation to keep up cash flow to carry on with their work in progressive manner.

A drawback to this plan may possibly result in a failure not to the contractor alone but to the owner and the project too. The client's inability of getting payment made to the contractor regularly or on time may possibly lead to delay in the project. (Lui and Burns 2003). Effectiveness reduced in a tremendous situation, the contractor could run into insolvency. Such happens always cripples the contractors from paying his basic, sub-contractors and even workers on his pay roll on time that causing everyone to suffer.

In this case claim of whatever form also considers a payment to sustain the continual progression of a constructing contract and should not be under estimated Contractual claims. Claims are requested by the contractors for compensation for a number of loss and or expense that he has suffered for, which he would not be reimbursed by a payment under any

other provision of the contract pink form clauses 2 (5) and 27. Also according to the terms and conditions, agreement set by the partners (Bunny, 2003). A change in the terms of the contract or as a result of unforeseen conditions and circumstances arising (Gibbs and Hunt, 2009; Chappell and Sims, 2005). They define the disruption claims as the assertion a right, usually by the contractor to an extension of the contract period and or to payment arising under the expense or implied terms of the contract, due to event provided for under the contract.

According to B-Bshait and Mauzanera, (1990) typical construction claims against owners are caused by a lot of reasons such as poor project planning. Scope changes constructive variation orders, orders and omissions, content, accelerations and expediting. Construction claim can be classified in various ways and into categories of three. Group one consists of claims for extra time to complete the project or contract, the second one is extra money claims that are risen out of the contract Chappell (2005). The third group categorizes claims by considering their legal bases. According to Harvey (2001). When they arise they are dealt with under the provision of the contract (Chappell, 1994). Alkass and Harris, (1991) and Hughes and Barber, (1992) classified claims also into three types:

- ✓ Contractual claims
- ✓ Ex contractual claims
- ✓ Common law claims

2.2 CONTRACTUAL CLAIMS

Claims founded on specific clause or expressed provision of the contract fall under the category. According to Harvey (2001), they arise and are dealt with under the provision of the contract define the situation in which they may be made and how they may be handled such as ground condition variant. They come as a result of time.

2.3 EX- CONTRACTUAL CLAIMS

These claims do not have any bases in the clauses within the terms and condition of the contract. The bases of the claim may have risen out of the project. Further bases of ex-contractual claims are as follows:

1. Setting out errors which are based on incorrect data supplied by the buyer representative.
2. Causing delay by other interfacing contractor
3. Supervision of the work by client or buyers engineer.
4. Loss or damage due to employers risks.
5. Work that has already been completed be uncovered.
6. Valuation of variation which may include alteration additions and omissions.
7. Special risk which very often occur, war, riots and other risks.

Resulted in loss of expenses to the contractor and must deal with fairness or equity (Harvey, 2002). An Ex-contractual or ex-gratia claims might be made to recover cost incurred by the contractor, the expenditure of which give benefit to the employer but for which it has no grounds for recovery under the contract. The principal bases of claims, which may have

been requested are among others as follows, common law claims, ex-contractual claims and contractual claims.

2.4 COMMON LAW CLAIMS

This kind of claims has no specific grounds within contract but is a result of breach of contract, which may be expressed or indirect. An instance of common law claims is the additional work suffered due to flawed materials that the employer provided. The claims are also for damages as tort, reputation.

In the event that the contract suffers delays due to the late issue of approved drawing, then he may claim for the loss made (Carnell, 2000) of which we classify mainly on

- Delay claim
- Scope-of – the work claim
- Acceleration claim
- Changing site condition claim

2.5 EVENTS THAT GIVE RISE TO CLAIMS

1. Action by employer
2. Adverse weather condition
3. Delay payment
4. Difficulties with customs
5. Disruption and extended overheads
6. High number of variation orders
7. Difficulties with nominated suppliers

8. Errors in setting out arising from incorrect data from the consultant.
9. Physical conditions
10. Methods of construction
11. Delay in commencement of works
12. Delay during execution of works
13. Awaiting drawing and instructions
14. Action of nominated subcontractors

2.6 TYPES OF CONTRACTUAL CLAIMS

The following are the various kinds of contractual claims that can be made on any construction works

1. Prolongation or delay claims; as a result of time extension. These claims are centered on the cost or loss suffered by the contractors to seek for extension (Norazian and Hammah2013).
2. Acceleration claims: expediting production pace to meet the original revised contract completion date as demanded of the client.
3. Disruption claims: clients' variation which have extension effect on site production.
4. Delay payment claims: the clients delay in payment of certificate issued by the consultant within as stipulated time specified in the appendix of contract honoring certificate
5. Fluctuation Claims: arises from the increase and fall of in the prices of input, resources such as materials, labor and plant.

6. Variation cost recovery: this process should be exercised only when the work is of same in nature, oriented, of equal condition to the cost of the working bills. Variation which should be made to the project work without touching neither the nature nor the condition under which the work will be done and the situation that will be important for the contractor for far rates and prices.
7. Extended attendance on contractors appointed by client clause. Main contractors price equipment used by the appointed contract by the client, in certain occasions relate to the particular length of time that the chosen contractor is on site. This is a result of variation which extension of period then affect attendance usage. Records must be kept for main contractors to collect the actual cost incurred by the usage.

2.7 CLAIMS CONCERNING DELAYS AND DISRUPTION

Most construction contracts are not completed on time scheduled. Delay or disruptions may occur due to the late issue of information and drawing by the consultant to the contractor, (Carnell, 2000). Some of the delays may occur due to action or the inaction of the main contractor himself, his sub-contractor and other suppliers the contractor nominated. Non-performance such as delay exposes the non-performing party to the various sections resulting to a breach of contract.

According to Kululanga et al (2011) delay in construction is a global phenomenon which affect many aspect of country's economy (Farid and Elsayegh, 2006). Claims are complex issues which are vital to parties of the construction contract (Bolton, 1990). These issues have to do with entitlement to regain the cost of delay or the essential to lengthen the

project. Delay in construction can lead a dispute regarding the agreement of the cost and necessary process since parties to the construction will always want to avoid or reduce or in the order hand canceled the cost. Norazian and Hammah (2013) opined that delays in construction can happen as a result of need of time or extension of time.

2.8 CLAIMS CONCERNING THE EXECUTION OF WORKS

According to Carnall (2005) includes;

- I. Claims due to acceleration of works
- II. Claims concerning the payment terms
- III. Claims over constructive changes
- IV. Claims concerning whether changes
- V. Claims on breach or termination
- VI. Claims concerning changes of legislation
- VII. Claims in delay and disruption (by suppliers and sub-contractors)
- VIII. Claims on variation
- IX. Claims on addition
- X. Claims due to omissions
- XI. Claims on design error
- XII. Claims on acceleration of work or early occupancy.
- XIII. Claims on wrong instruction on the administrator.

2.9 DETERMINING PERIOD OF DELAYS/ DISRUPTION/ ACCELERATION

The contractor must do the following in order to determine the period of delays, disruptions and acceleration Norazian and Hammah (2013) stated.

- I. The contractor master programme has to be correctly resourced and prepared to reflect regular and diligent site progress.
- II. The programme must be updated to reflect actual progress.
- III. Confirm that the cause is recognized under the appropriate contract (clause)
- IV. Demonstrate the occurrence, directly affects the critical path activities

2.10 CONDITIONS OF CONTRACT PROVISIONS FOR CLAIMS

Construction is a high risk business hence to reduce the risk element. Most conditions of contract (standard forms) provide procedures for claims dispute settlement. Among these standard form of conditions includes

- a. JCT 80
- b. FIDIC
- c. PPA
- d. PINK FORM

2.11 PREPARATION OF CLAIMS

The preparation of claims is very tedious and must be done with skepticism (by either claim expert or a Quantity surveyor). The survival or success of any claims depends largely on its preparation. This mostly allots a good deal of the decision making on the parties involved and hence a lot on which to disagree (Chester et al, 2005). General guidelines to effectively

manage contractual claims and keep disagreement from escalating was also researched and developed by Jergeas and Hartman (1994). Norazian and Hammah (2013) also cited the same and summarized as follows, keeping records, photographs. Site agent signing all documents concerning claims etc.

2.11.1 SELECTION OF CONTRACT CLAUSES AND GIVEN NOTICE

The contractors are to select important clauses in the condition of contract as grounds of their claims (Rodke and Seymour, 2004). The contractors are to think about the contract implication before the choice of clauses to have some flex. In the choice of clause to act on the contractor should prove and make reference to past judgments of similar nature.

According to Badu and Amoah (2004) well explained memoranda as the notice is sufficient, but full details must be provided later. Notification must always be communicated in black and white as document that the relevant contractual clauses selected are in.

2.12 FOUNDATION FOR SUCCESFUL CLAIMS

Having discovered the existence of a claim situation the following are the important foundation upon which a successful claim is based (Naoum, 2007).

- I. Entitlement: something that you have an official right within the contract must be stated and proved. It is usually important to state the clauses on which claim is made (Seeley, 1993).
- II. The employer's responsibility: most clauses required the employer's responsibility clearly shown. Which add up to the action and inaction of the consultant and contractors.

- III. Notification of the claim: where term of contract needs notification of a claim, it is important that this is given and in fulfillment to any period required. Failing to do so may invalidate the claim, and the cost and the expenses are more likely reduces to the contractor's disadvantage.
- IV. Extension of time: extension of time should be asked for where necessary: this normally form grounds for claim of entitlement to increase preliminaries, overhead, extra labour, and plant.
- V. Cost records: records must be capable of establishing the extra cost and expense incurred.
- VI. Accuracy: most claims fail because records shown are insufficient or wrongly prepared. Document must be well prepared and substantiated by consultant's representative is important photographs are particularly useful as supporting evidence.

2.12.1 INFORMATION REQUIRED TO SUPPORT CLAIMS

Principally to cover extra cost claims are submitted, loss such as prolongation of the project, works which has surfer disruption. By so doing a lot of information are required to support the preparation to avoid argument (Carnell, 2005). The contractors require the site agent to prepare or to insert daily records against all works done with date and if possible report to the consultant for his comment on or against list of topics to avoid omission. It is important to keep at least three set of records in official record files of different cabinets at offices to prevent against fire destroying them at a go, Badu and Amoah (2004) suggested.

A contractor preparing a claim needs to support or refer to the following document to prove the claims and also for justification.

1. An accurate and comprehensive highlight problems in site diary.
2. Details of site survey this is done based on quantities of earth works.
3. A well recorded time sheet showing periods between date of procession and date of tender which will clearly show if there are delays.
4. Photographs to show work in progress with dates
5. Available site condition reports
6. Data sheet for variation and it effect
7. Contract correspondence to the client and from the client.
8. Head office and meeting at site minutes.
9. Consultant instruction book which shows date, time and instruction.
10. Labour allocation sheet which shows the exact work done.
11. The consultant certified extension of time form.
12. Files containing interim certificates and measurement.
13. Weather report for the previous years.
14. Site cost, the utilization of finances on site.
15. Stationary under time keeper's records.
16. Records showing plant man hours.
17. List of invoice with cost under inflation or fluctuation.
18. Records on general items such as preliminaries.
19. Holiday records.
20. Buildup tender particularly allocations for preliminaries and general items, site and general overhead and profit.
21. Consultant instruction, variation orders and site instruction could be the vital single item.

22. Variation data sheet nature and effect of variation.

2.13 CONSTRUCTION CLAIM DOCUMENTATION

Documentation of construction claim constitutes a very much important phase in the management of claims and thus expand in detail the process. It support the contractor to justify his/her point of argument.

2.14 DOCUMENTS SIGNIFICANT TO CLAIMS

The most vital document is the contract document which contains the agreement, materials and associated cost showing the value of work done and where they are doing it. Measurement can be done to know the exact work done and the amount involved. The need for such a structured instrument for auditing construction contractions claim process. Management have to understand the trace of all period assignment that are not productive. There must be a document that shows the allocation of labour and materials and the reasons for stoppage when such occur. This may or can be as a result of consultant issuing instruction or short coming of the contractors own organization.

An important record document which is also vital to claim is the variation record sheet which comes out with a lot of in-depth question.

In addition Ali (2011) said the following are the other documents very crucial to the success of claim;

1. Critical path which identify the crucial sequence and timing of the other activities as indicated in the contract document as information to work with.
2. Plants standing or employed before is schedule date of work.

3. Resource based on progress records.
4. Plan expenditure to comply with master program to show the weekly estimated resources.
5. Records of plants standing or uneconomically employed.

2.15 ESSENTIAL REQUIREMENT IN CLAIM PREPARATION

The main way in putting in the validity of claims is to put in good and correct records, Ali, (2011), According to Seeley (1998), the most accurate procedure is to inform the consultant when situation of claims set in. A manager's position according to Badu and Amoah, (2004) can be the secrecy part of much of the expenses information, which most of the contractors often avoid proudly and which may be look for to satisfy consultant for the validity of the claim.

All claims should therefore be prepared as if it is used as proof in the court. It should be arranged well and detail for presentation as document in a bound cover. A claim document which is carelessly and untidily arranged or prepared will not receive very effective attention (Seeley, 1994).

2.16 PRESENTATION OF CLAIMS

As work done by a contractor must be paid for weather through amicable solution or dispute the claimer should present the claim in a manner in which there will be no question such as,

- I. Introduction
- II. Contractual basis of the claim
- III. The detail of the claim

IV. Quantification of the claim

V. Appendices/ any other document to support the claim

It is essential to go into sufficient detail so that the recipient of the claim does not have to search all through other documents to find the basic facts (Seeley, 1998).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Result of research basically relate to the procedure used and the process employed, and it importance to select and perform the studied method.

This section describes all the procedures adopted to achieve the objectives set for this study. The procedures adopted include all the information that are important to the data, how the data were obtained and where they were, the method used to obtain sample size, problems encountered and difficulties went through during the search data, and when administrating the questionnaire, the response rate.

The objectives as lamented in the research will bring the immediate numerous event, the root causes that is influential factor behind the delay and describes constraints to the factor. Factors that hinder proper preparation and administration of contractual claim and the best procedure to prepare and administering building construction contract claims.

3.2 EXPERIENCE STAKEHOLDER FOR THE SURVERY

The appropriate method of this study lies on in-depth questions which will be compiled from contractors based in the Western Region by interviews. The reason or objective is to seek their experience on the findings of the constraints in the construction contract claims in the Ghanaian construction industry.

In respect to this, a questionnaire was developed for the contractors. The details are as shown in the appendix 'A'. The contractors are the entities whose tender are being evaluated

and accepted by the clients, therefore project managers, site managers, and other technical staffs were surveyed.

The category of contractors that were contacted were A3 B3, A2 B2, those who are registered to the ministry of Water Resource Work And Housing classified under financial class D1 K1, D2 K2. Because they are within the classification that tender for high price contract. The survey was limited to contractors working in the Western Region of Ghana. The study adopted quantitative method.

3.2.1 DATA COLLECTION

The primary source of data for this research is in the form of questionnaire administered to building contractors in the Central Region in the classes D1, K1, and D2, K2. The main function of the survey was to collect information that can be analyzed to produce conclusion in the area of preparation and administration of construction contract claims in the Ghanaian Building Industry.

3.3 QUESTIONNAIRE STRUCTURE

Prior to the sending out of the designed questionnaire as attached to this document was tested with an experimental survey for articulacy, simplicity, and completeness. The questionnaire survey is made up of three sections. The first section inquire about the general data on respondents' profile and experience, the second section goes into information about constraints in construction contract claims and the third deals with information on a successful construction claim. Because of the high financial implication of delay Ndekugri

(2007) has noted. The constraints in construction contract claim for this study are classified into the following namely;

1. The common sources for construction claims in Ghanaian construction.
2. How do construction claims arise?
3. The information required for construction claims.

3.4 DESIGN QUESTIONNAIRE

The designed questionnaires were intended to probe the behavior of all patterns of constructional claims in the industry. The questionnaire which was designed for the survey was put together by considering the important literatures associated with construction claims. The interview was open to asking further question which focuses on concerns that arise in the course of the interview. The freedom to follow the interviewee to ask for explanations, and to focus on specific projects, made the interviews insightful.

3.5 DESIGN OF SURVEY

The importance of each risk was requested from the respondents to be indicate on a scale of 1- 5, where 1 apply to very small, 2 to small, 3 to normal, 4 to high and 5 to very high respectively. The level of importance was associated with the general effect the factors have on achieving the project's objective of being within budget, on schedule and meeting the performance requirement of the client.

Respondents were to tick from the list of effects stated on the questionnaire, as many as were applicable to them and to state any other effects they feel were not mentioned. Ticking

was adopted because many at times people feel reluctant to answer questions but tell you they doubt have time, so to make it easy I go by just ticking.

3.6 DETERMINATION OF SAMPLE USING

To determine the appropriate sampling size, the researcher required to conduct survey, some factors comprising of the reason for the case study, size of the population, the risk of choosing a “bad” sampling and the acceptable sampling error were considered.

Ahadzie (2007) pointed out that there are over 20,000 registered contractors with Ministry of Water Resources, Works and Housing and 10% of these contractors are in the Western Region of Ghana. As at now Ghana has 137,000 registered building contractors, in the Western Region 7,730 being D1 K1 – 240, D2 K2 – 240, A2 B2 - 660, A3 B3 – 549 information from Net as at March 26 2016.

To find out the minimum sample size of these registered contractors in the Sekondi - Takoradi metropolis, Israel (2012) formula which gives a procedure for calculating minimum sample size has to be applied.

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

Where n is the Sample size,

N = population size

e is the level of precision

Taking 7% as the level of precision and N equals 60, we arrived at a sample size of 40 giving me the bases for preparing 40 questionnaires for distribution.

Therefore in determining the minimum sample size of contractors in the Western Region (Sekondi - Takoradi) given that, N = 60

Table 3.1: Population and Sample Size

SIZE OF POPULATION	SAMPLE SIZE (n+) FOR PRECISION
	7%
	7%
60	40

n = 60 signifies that the least sample size of building contractors in Sekondi - Takoradi that will be used for the research is just about 60. The 60 contractors will help ascertain the real scope for the research. Saunders (2007) on the other hand put into view a formula for find out the real sample size. The formula given by Singh(2006) take into account anomalies like refusal to answer the questionnaires, ineligibility to respond to questionnaires, failure to trace respondent which happen in the course of dissemination and gathering of data. Here is how the formula is presented.

$$n^a = \frac{n \times 100}{re\%}$$

n^a indicates the real sample size needed, n represent the least sample size, re% is the anticipated reply level articulated as a percentage.

Other researchers such as (Newman and Idrus, 2005) and others, have pointed out that a response level of 30% is good enough in construction studies. Therefore given that n = 60, re% = 30. n^a will be calculated as

$$\begin{aligned} n^a &= \frac{60 \times 60}{30} \\ &= 120 \end{aligned}$$

Which the formula will give as a high value but I limit myself to the Israel formula because the time for the submission of the Thesis to the Department of Building and Technology of Kwame Nkrumah University of Science and Technology (KNUST) for assessment is short.

3.7 THE LEVEL OF PRECISION

The level of precision, also known as sampling error indicates the extent in which the true value of the population is anticipated to be. This is mostly articulated in percentage point (eg. 45 percent) have assumed a proposed practice with a precision rate of 45%, then the contractor can concluded that amongst 55% and 65% of farmers in the population have taken up the practice.

3.8 SUMMARY

Even though different methods have been used for other study, but the only clear and appropriate methods to me were employed in this research. The above chapter revealed all the different research methodologies available for conducting a successful research work. In addition, the chapter proceeded to give an insight into how the questionnaires were prepared, distributed and managed. A quantitative method of questionnaire was chosen for closed and open ended questions formats. A questionnaire totaling to 40 would be administered.

Table 3.2: A Questionnaire Totaling Table

CONTRACTORS		
FIRNG	QUESTIONING ISSUED	TO ADMINISTER ALL
D1 K1	22	22
D2 K2	18	18

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

The overriding aim of this study is to have advance knowledge on the constraints in the preparation and administration of contractual claims by assessing and documenting the forms of constraints encountered by Ghanaian contractors. The research also sought to establish the degree of knowledge among some construction practitioners.

4.2 BACKGROUND INFORMATION

The study had interaction with a wide range of professionals in different construction industry firms in the Sekondi – Takoradi metropolis. These included Quantity Surveyor, Civil Engineers, Architects, Construction Managers as well as Technical Engineers (Fig 4.1). Technical engineers made nearly half the number of professionals that the study interacted with (48.8). Quantity surveyors took the next greatest share of 27 percent. Construction Managers followed suit with 10 percent. Architects with 8.8 percent and Civil Engineers with 5 percent.

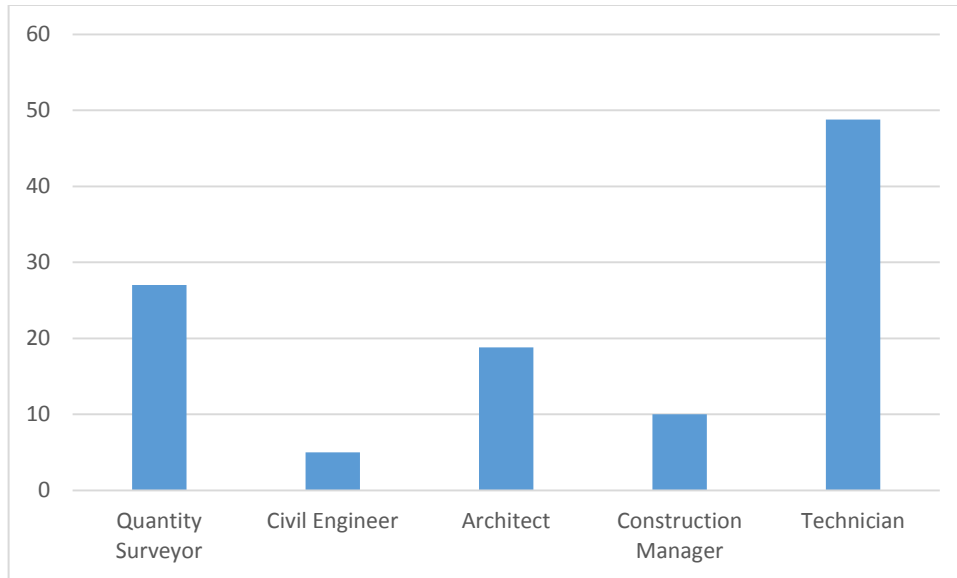


Figure4.1: Percentage of professional Bodies in the construction industry which responded to the questionnaire.

4.3 ANNUAL TURNOVER

Annual volume of work in the last 5 years in Ghana cedis (GH¢). Most of the respondent (5.2 percent) reported that their firms have recorded an annual volume of work of between GH¢500,000 and GH¢ 1,000,000 according to (Fig 4.2) more than a tenth (12.5 percent) reported that their firms have recorded an annual volume of work of over GH¢ 1,000,000 while 31 percent said that theirs have recorded an annual volume between GH¢250,000 and GH¢500,000 over the last five years. At least all the respondents reported to have undertaken some appreciable level of activities within this period which makes them eligible to provide valid information for decision making.

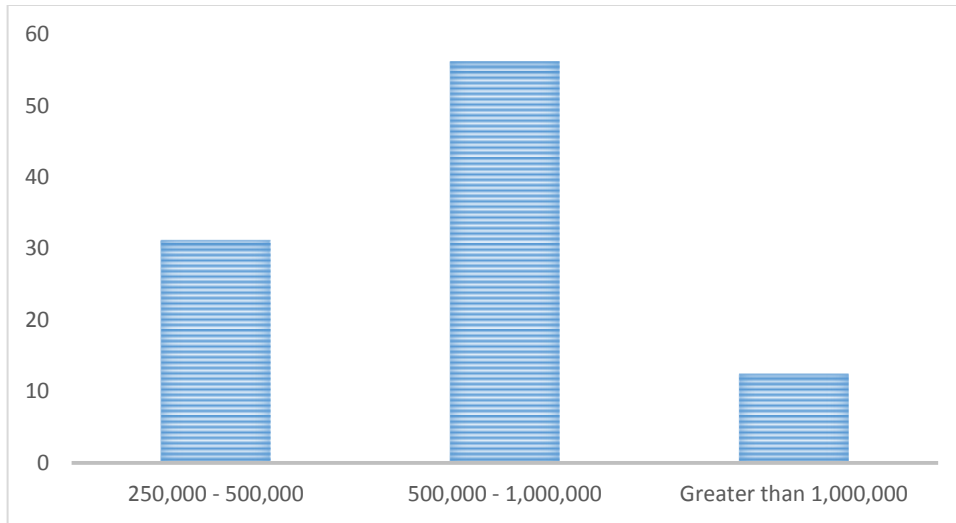


Figure 4.2: Annual Volume of Work

4.4 FORM OF CONDITION OF CONTRACT

Most of the firms largely used standard condition of contract, PPA (89 percent) according to figure 4.3 below. The rest however use both FIDIC and PPA (9 percent) as well as FIDIC only (2 percent).

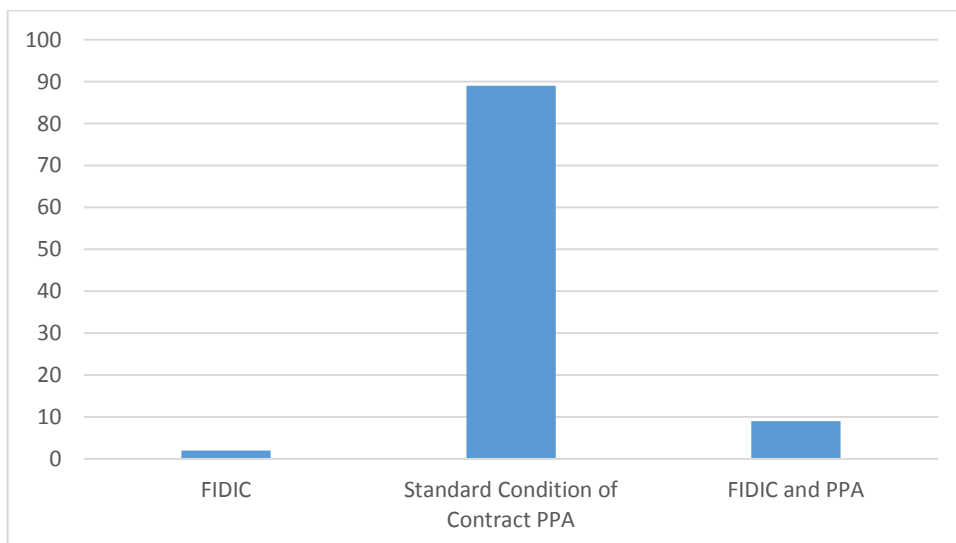


Figure4.3: Form of Condition of Contract

4.5 CLAIM MANAGEMENT AND ADMINISTRATION

The majority of respondent 4.2 percent have had between 11 years to 30 years of experience in the preparation of claims for their firms (Fig 4.4). Another 43.8 percent have had experience of between 6 years and 10 years for preparing claims for their firms. 7.5 percent of the respondents have 1 – 5 years of experience in the claims preparation while 2.5 percent of them have less than a year of experience in the preparation of claims. The information above suggests that respondents to this study have enough experience in the preparation of claims as reported by the respondents themselves.

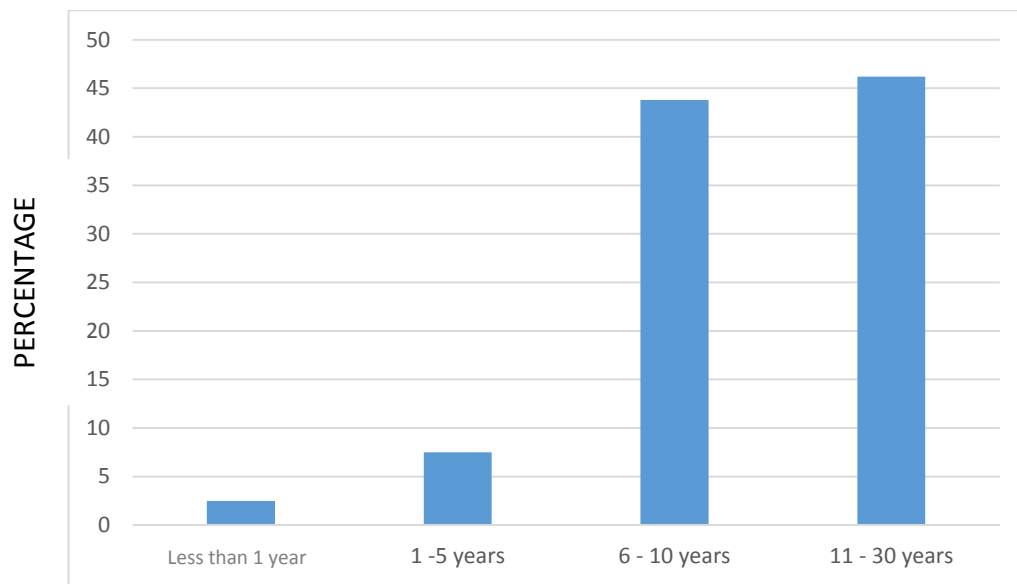


Figure4.4: Years of Experience of Respondents

4.6 ASSISTANCE IN THE PREPARATION AND ADMINISTRATION OF CONTRACTUAL CLAIMS

Almost half (48.4 percent) of the respondents in this study get assistance from their site Engineer in the preparation and administration of claims. 20 percent get assistance from a technician in the preparation, 16.2 percent from quantity surveyor and 12.5 percent from the Managing Director in the preparation and administration of claims. Those who are not assisted by anyone are 2.5 percent.

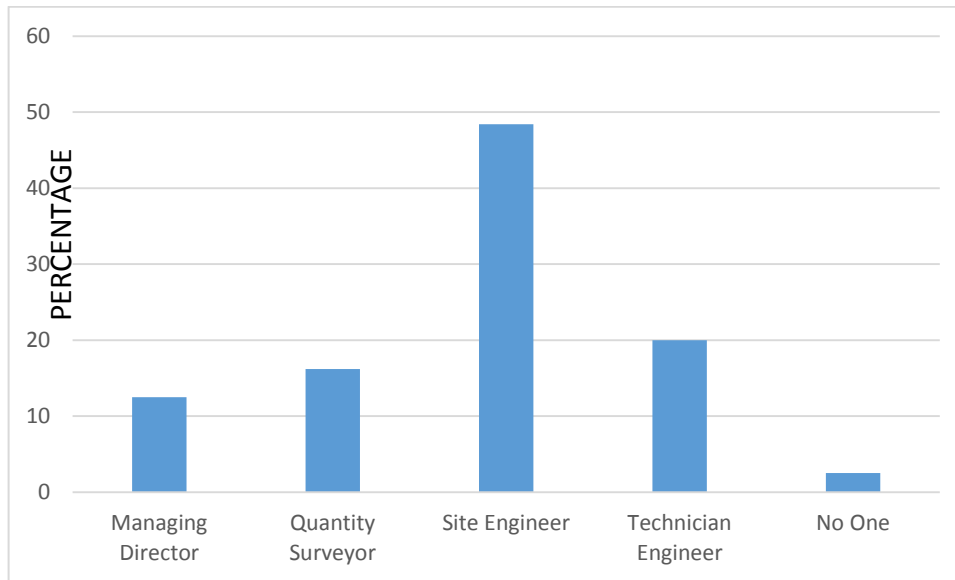


Figure 4.5: Assistance in the Preparation and Administration

4.7 NATURE OF FIRMS INTERVIEWED

As indicated in the bar chart of Fig 4.6, respondents representing 76 percent described the nature of the firm's activities as Building Construction and Civil Engineering, while 21 percent described theirs as Building Construction only. The others who are involved in other activities other than building and civil engineering are 3 percent.

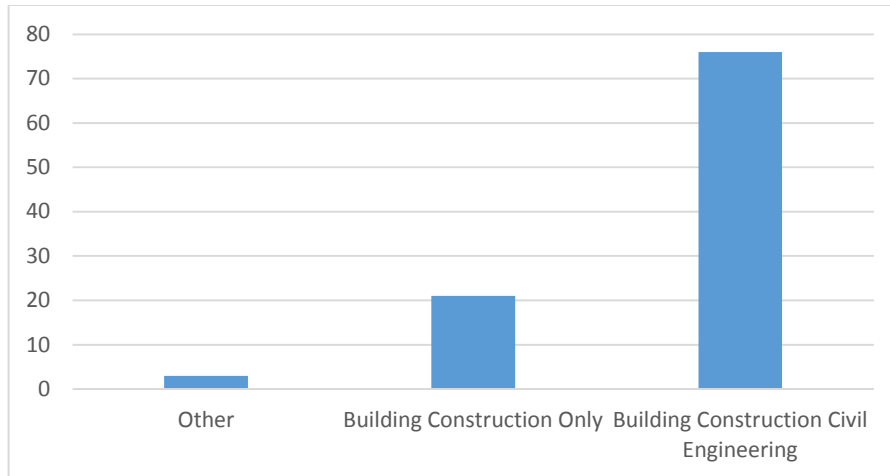


Figure 4.6: Firms Activities

4.8 IDENTIFICATION AND NOTIFICATION AND PERIODS

Most of the respondents (91 percent) always notified the client when they identify claims, while 9 percent also said that their firms sometimes notifies the client when a claim is identified. Majority of the respondents (71.2 percent) reported that notification of clients take place within 14 days when claims have been identified. However (28.8 percent) said that they do notify their clients within 28 days after identifying a claim.

Records of the claims are kept by the filing system and on the computer by 75 percent of the respondents, after identifying claims, others (25 percent) however reported that only filing system is used for the recording of claims. More so 87.5 percent of the respondents reported that these records are always kept by their firm while the rest (12.5 percent) admitted that sometimes the records are not kept but it is left on site.

Every four out of the five firms visited (79 percent) substantiate claims when identified in writing according to respondents from these firms as in figure 4.7. 16 percent substantiate the claims by face– to-face interaction. A small majority (2 percent) use the telephone to substantiate claims while 3 percent said that at site meeting that they present report.

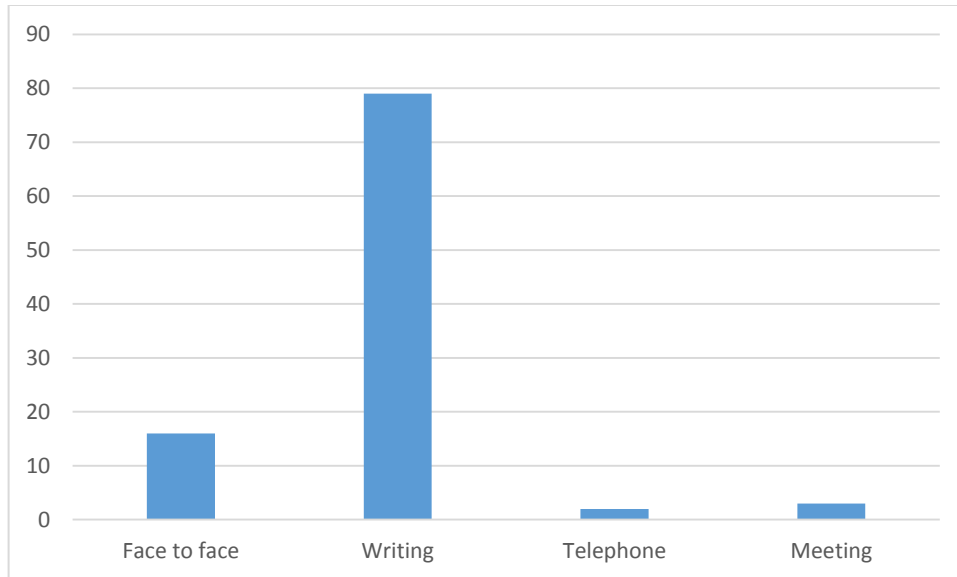


Figure 4.7: How Claims are Substantiated

4.9 PREPARATION OF CONTRACTUAL CLAIMS AND CAUSE FOR CONTRACTUAL CLAIMS

Respondents when asked to rank, in their estimation, the reason for making claims as mention in the head of claims in order of importance to their firms on a scale of 1 – 5 while “1” signifies “least important” and “5” signifies “most important”

Table 4.1: Causes for Contractual Claims

Causes for Contractual Claims	NO	MINIMUM	MAXIMUM	MEAN	STANDARD DEVIATION
Variation or Modification of the quantity of the work	40	3	5	4.90	.377
Late instruction or change of content of work	40	2	5	4.26	.590
Weather conditions	40	2	5	4.04	.737
Errors in description or qualities or any omission there off	40	3	5	3.90	.377
Variation or modification of the design of the works	40	3	5	3.64	.733
Suspension of the work	40	2	5	3.29	.640
Removal from site of anything brought on to site and substitution of any such things	40	2	5	3.28	.595
Variation or modification of the quantity of the works	40	2	5	3.20	.560
Delay in payment	40	3	5	4.80	.738
Fluctuation of materials	40	3	5	41.05	.729

Variation or modification of the Quantities of the works as the most important reason for making claims in their firms with an average rank of (4.9) as stress by the respondents. Late instruction or change of work content followed closely with (4.26). Weather condition (4.04). The above three are followed by Error in Descriptions of Quantities or any Omission in the Bill.

4.10 NOTIFICATION AND PERIODS

Respondents place Meeting minutes and Documents as the most important factor that helps in the administration of claims. Following in order of descending, Client correspondence, Letter, Site Diaries, Field reports, Contract Modification and Contractual Correspondence. The underlies as indicated are means, Drawing, weather condition records, Invoices, Agreement Documents, Consultant correspondence. In addition to prove are photograph, Time Records and labour replacement comes last and the minimum important factor that help's with the preparation and administration of claims.

4.11 STEPS INVOLVED IN THE PREPARATION OF CONTRACTUAL CLAIMS

Participant in the study were given the chance to rank the additional steps involved in the preparation of contractual claims in order of the need of their firms on a scale of 1 to 5, where 1 signifies “Lowest” and 5 signifies “most important”.

Table 4.2: Statistics on important steps in preparing Contractual Claim

	N	Minimum	Maximum	Mean	Rank
Notification of the client	40	4	5	4.90	.302
Determination of contractual clause(s) claim is to be notified	40	3	5	4.53	.746
Determination of payment clause is to be sought	40	3	5	4.24	.830

Respondent ranked “Notification of Client” as the most important step in the preparation of contractual claims which the table above indicates as average ranked 4.9. The next ranked by the respondents is the “Determination of Contractual clause(s) which claim is to be

informed as also the most important step and was ranked 4.5 with standard deviation less than 1.0. One which was ranked the lowest important step for contractual claims preparation is the “Determination of payment clause” as indicated in the table.

4.12 THINGS THAT HINDER ADMINISTRATION OF CONTRACTUAL CLAIMS

As the research is to determining the cause of constraints in contractual claims in the construction industry, the respondents were also asked to rank the factors that hinder the administration of the claims in order of importance of their firms.

The rating then came out that, delay caused by clients, is the most important factor that hinders the administration of claims and was ranked 4.85 by the respondent. Lack of claim Documentation is ranked second most important factor that hinder the contractual claim administration. The least ranked factor that hinder the administration of contractual claims according to all the respondents is the Oral instructions from the client.

4.13 METHODS OF RESOLVING CLAIMS DISPUTE

When the methods of dispute resolution was asked to how their firm go about it, majority 4.98 pointed out clearly that Mediation is the best and most important dispute resolution method by the firms. Conciliation was ranked second with 4.95 and it follows as Adjudication 4.0, Arbitration 3.38, Litigation 1.58 was last because they talk about the delay of the normal court system.

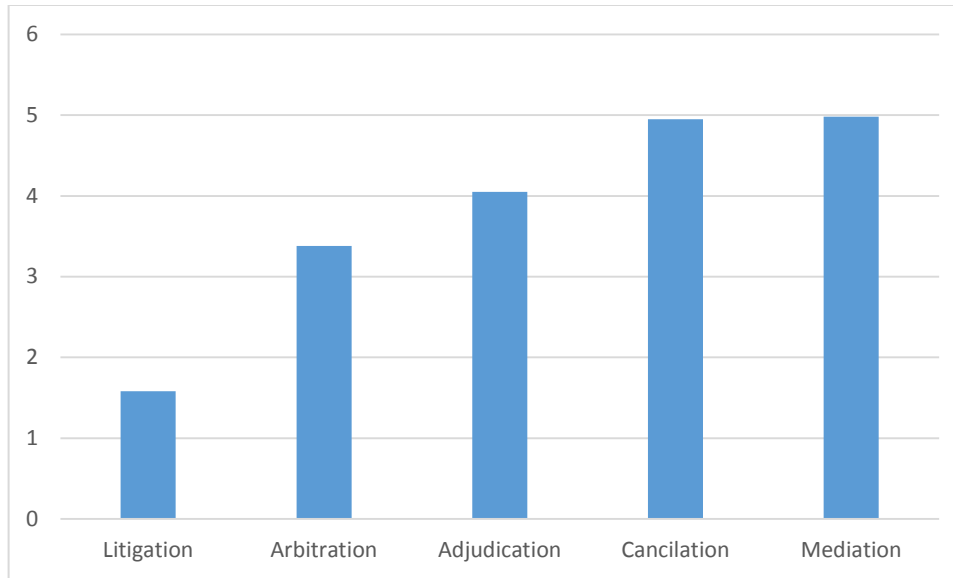


Figure 4.8: Rank of Dispute Resolution Methods in Resolving Claim Dispute

4.14 CAUSES AND IMPLICATION OF CONSTRAINTS IN CONSTRUCTION

CLAIMS

The initial bases of constraints can be attributed and examined with a similar equation usually used to represent project threat. Gastir (2003) stated constraints occur when risk is bound to happen. Normally, initiates of constraints can be shared as Internal or External causes. External constraints are causes that generally has no relation to the project itself and will fall into the force majeure level. They can be of the government acts as the passing of new regulations, laws, the regime of introducing taxation, new development, or program of investment. Event of such nature will generally involve some level of right of recompense to be permitted on to the contractor. The reasons of the external constraints can also rise from the act of God, which can be earthquakes, hurricanes, or very cold weather. Risk of this nature can usually be guide against by insurance and hence insecurity that would be introduced into a project can be transformed into an insurable cost. The external disruption

which brings about constraints in contractual claims also relates to social or political event that, the client fell reluctant to pay because they do not have any benefit out of it.

Internal causes of constraints can be further divided into Technical causes including disruption in communication, improper documentation and unqualified personnel in preparation of the claim (preparation skill) and financial causes such as shortfalls in the projects or client's inability to pay costs, unplanned resources.

Bramble and Callahan (2000) stated, the implication of constraints in which contractors go through which turn to disrupt the progress of the project in a way of delay, strikes and other unforeseen circumstances. In some way, it will be difficult for a contractor to reorganize projects in a way that does not cause waste of resources. Smith (2012) also stated that financial impact of trade stack and idle labour and plant that can result from unscheduled delay.

A means that contractors will use to work against the effect of constraints in contractual claims is to have the necessary understanding of the claims. The document that gives reference to the claim and other supporting information.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

This chapter presents the conclusion segment of the research and recommendation made for further investigations

5.2 SUMMARY OF FINDINGS

It was discovered that most of the respondents were experienced in terms of claim preparation. It was also discovered that they get support which is largely from site managers but sometimes from technicians, quantity surveyors, and at times from managing Directors.

The majority of personnel were unfamiliar with the support of Managing Directors but rather the site Managers. It was revealed that firms duly notify client when claims are identified which in most instance are prompted immediately after claims are identified. With this, effect does not account to a challenge to firms engaged in construction claims in Ghana. Records of claims by firms are largely through the filing system and on a computer. When these claims are identified, it is substantiated mostly in writing but sometimes through face to face interactions.

The research revealed or discovered that the leading causes of constraints in contractual claims is documentation or not understanding the clauses in the contract documents. Qualified personnel in the preparation is one of the three most important reason for claims. Meeting minutes is as well a supporting document that are the most important factors that helps in the administration of claims. Correspondence and letters to the client followed as most important factor that help in the administration of claims. Correspondence .and letters

to the client followed. From information and indication of the study factors that also help are Time records, specification addenda and labour change.

Notification if client is most important step in the claims processing process before it comes to determination of the contractual clauses. Mediation is the method of Dispute resolution that most of the contractors use to solve problems when it occurred. Also important in resolving dispute is conciliation and adjudication. Litigation and Arbitration was ruled out because respondent stress that it is a time wasting method.

5.3 CONCLUTIONS

THE MAIN CAUSES OF CONSTRAINTS IN CLAIM

The research has proven emphatically that the main causes of claims in the Ghanaian construction industry are;

1. Improper documentation
2. The contractor not familiar with the contract document.
3. Claims not prepared by competent or qualified persons.

5.3 RECOMMENDATION

This study has shown that the main constraints in contractual claims is documentation of the work content. This records show that it is more than 60% of the causes of the claim by contractors. Recommendation is been sought that consultant in collaboration with the clients or (Buyers) should analyze their proposals document critically before putting in order to mitigate the constraints

According to the research also the significant factor that hinder preparation and administration of contractor's contractual claims are that the contractors are not familiar with the clauses in the contract document which they should refer to justify their payment of claims. It is recommended that the client, after notification by the contractor should respond immediately within 7 days in order to avoid delays, also contractors must contact experts in the preparation of the claims. It is also recommended that claims must be prepared by competent persons.

It is also recommended that all instructions from the client or his representatives should be documented but not in oral form. This to a large extent provide reliable prove or evidence of constraints in claim preparation and payment.

The public procurement board should come out with a standard procedure of administrating claims and specify days that the client should respond to notification of claims to avoid misunderstanding and conflict on site. The contractor should study the contract document well to Aquent themselves with all the conditions in the document.

I am of the view that further studies (research) be done to investigate firm's lack of qualified personnel and ways of making construction practices more professional.

REFERENCE

- Ahadzie, D. (2007). Project Managers Performance in Mass House Building Projects in Ghana a thesis submitted School of Engineering and Built Environment University of Wolverhampton. UK 29th May, 2007.
- Amoah, P., Osei-Asibey. D; (2010) Contract Administration and Professional Practice 2 (QSCE 454)
- Ali, D. (Suit against Morse Brothers, Inc. Claiming breach of contract. (inc-no-c498-0489792-s-aug CT 2001.
- Alkass, S. and Harris, F. (1996).“Construction delay analysis technique”, Journal of Construction management and economics.
- Assaf, S. A., Alhejjis, (2006). Cause of Delay in Large Construction Projects, International Journal of Project Management, 24 (4), 349 – 357.
- B-Bshait, S, and Mauzanera, J. (1990). Claim Management, “Project Management” Vol. 8 No. 4 PP 222 – 228.
- Badu, E.and Amoah, P. (2004). Construction Administration and Professional practice.
- Bintil,E. (2008). Dissertation submitted to the Institute of Development Studies of the Faculty of Social Science, University of Cape Coast, Governance, Law and Development. December, 2008.
- Bolton, 1990).A Theory of Predation Base on Agency Problems in financial contracting. The American Economic Review: Volume 80, Issue 1 (Mar, 1990), 93-106.
- Braimah, N. (2008). Contractors’ and Consultants’ preparation on contract from project delay analysis methodologies paper presented at COBRA 2008.

- Bramble, M. and Michael, D. (2000). Construction Delay Claims 3rd Ed. Aspen Law and Business at p 3-
- Bramble, B. B, and Callahan, MT. (2000) Construction Delay Claims. John Weley and Sons, Inc New York, NY.
- Bunny, N. G. (2003).The FIDIC form of Contract, Blackwall Science Oxford England.
- Carnall, N. T. and Chappell P. S; (2005). “Causation and Delay in Construction Dispute” Blakwell Science.
- Canell, N. J; (2000). Causation and Delay in Construction Dispute 2nded (Blakwell, Oxford).
- Chappell, C. D. (1994). Contractors Claim: An Architects Guide. The Architectural press London.
- Chappell, P. S. and Sims, G. (2005). Building Contract Claims 4thed (Blackwell, London)
- Chester, M; Hendrickson, C; Liu, L; Burns (2005). Cost impact, Scheduling impact and claims process, during construction, “Journal of Construction Engineering Management”.
- Chouichien, Z. and Touhaiwat, K. (2006).Information system for managing employers’ claims, Technology and Innovation for Sustainable Development Conference (TISD 2006).
- Dettmer, O. U (2011). Strategic Navigation, In the Constraints Management Model proceeding of the APICS, International Conference Las Vegas, Nevada (USA) October (PP – 6.9).

- Eyiah, A.K. and Cook, P. (2003). Financing small and medium scale contractors in Developing countries: a Ghana case study *Construction Management and Economics* 21(4), 357 – 367.
- Farid, A.S. and El-Sayegh, S. M. (2006). Significant factors causing delay in the UAE Construction Industry, *Construction Management and Economics*, 24 (11), 1167-1176.
- Fellows, R. and Liu, A. (2003). Stochastic Construction Time Cost Trade – off Analysis, “*Journal of Computing in Civil Engineering*.”
- Gastir, B. (2003). Communication Theory of identity and its Extension, *Cultural Contract Theory*.
- Gibbs, J. P. and Hunt, M.L. (2009). *California Construction Law* 16thed (Aspen, New York)
- Gould, N. (2004). Disrupt resolution in Construction industry: An overview in construction law semina: Introduction to the Basic.
- Hartman, F.T; Semple, C. and Jergeas, G. (2005) *Construction claims and Disputes causes and time management*.
- Harvey, J. (2001-2002). Evaluation for what the Fifth Biennial Conference of the International Network of quality Assurance Agencies in Higher Education; Santiago 2002 7(3) pp 245-264.
- Hughes, G. A. and Barber, J. N. (1992). *Building and Civil Engineering Claims in perspective* “Longman Scientific and Technical London”.
- Jergeas, G. F. and Hartman, F. T. (1993). *Construction Claims and Dispute: Causes and cost / time overruns*. *Constr. Engrg and Mgmt ASCE*, 120 (4) 785 – 795.

- Jergeas, G. F and Hartman, F. T. (1993). Contractors Construction Claims Avoidance, Journal of Construction Engineering and Management (1994) 120, (3) PP 553 – 560)
- Kululanga, G. K., Kuothca, W., McCaffer, R., Edum, F., (2011) Construction Contractors ‘Claims process frame work, Journal of Construction Engineering and Management volume 127 No. 4, 309 – 314.
- Kim, S., Davies, J. (2008). The Theory of Constraint thing process retrospect and prospect International Journal of Operation and Production Management 28 (2), 155 –.
- Liu, L., Burns S, C,(2003) Stochastic Construction Time Cost Trade – off Analysis, “Journal of Computing in Civil Engineering.” Vol. 14 No. 2, 177 – 12
- Naoum, G. (2007). Dissertation research and writing for construction students 2ndEd. (Elsevier, London).
- Ndekugri, I. (2007).The construction and Building Research Conference of the Royal Institution of Chartered Surveyors Georgia Tech Atlanta USA 6-7 September, 2007.
- Newman, S. V. and Idrus, A. (2005). Journal of Emerging Trends in Economics and Management Science (JETMES) 5(7): 57-61.
- Norazian, I. and Hammah, A (2013). Issues Associated with Extension of Time (EOT) Claims in Construction Indus.
- Pickavance, K. (2005). Delay and Disruption in construction Contract 3rded (Informal Legal Publishing London)
- Rodke, J., Seymour, D. and Fellows, R. (2004).Planning for Claims, An Ethnography of industry cultural, Journal of Construction Management and Economics 22(6) 655 – 662

- Saunders, M. (2007). Trust and Distrust polar, Knowledge of how patients play a critical part in the co-construction of safety, University of Surrey.
- Seeley, I D (1993) Writing about Ruler ship and Service in theory
- Seeley, I. H. (1994). Building Quantities Explained, fourth edition. Pp. 4.
- Seeley, I. H. (1998). Building construction and Design Civill Engineering. www.palgrave.com/978-2016
- Singh, P., Fook, G. Y., and Sidhi, G. K. (2006) A comprehensive Guide to writing a Research Proposal. Batu Caves: Venton Professional.
- Singh, A., (2006) Multiple claims in construction, law Education, case study, Journal of professional issues in Engineering Education Practice
- Smith, D. G. (2012). Theory of construction project management Improving cost schedule, performance and overall effectiveness, North Central University.
- Surawongsin, P. (2002). The implementation of construction claims management in the Thai Construction Industry, “Master Thesis, School; of Civil Engineering Asian Institute of Technology.
- William, T. C. and Eden, J. (2002). Structuring a delay and disruption claim and application of cause mapping and system dynamics, European Journal of Operation Research 148, 192 – 204.

APPENDIX

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI
COLLEGE OF ART AND BUILT ENVIRONMENT
DEPARTMENT OF BUILDING TECHNOLOGY
QUESTIONNAIRE SURVEY
“CONSTRAINTS IN CONTRACTUAL CLAIMS IN THE GHANAIAN
CONSTRUCTION INDUSTRY; A CASE STUDY IN SEKONDI – TAKORADI
METROPOLIS”**

I am an MSC student of the Kwame Nkrumah University of Science and Technology (KNUST), Department of Building Technology, conducting a research to identify the constraints in Contractual Claims in the Ghanaian construction industry.

Your response to the following questions would be highly appreciated for the success of the thesis. Any information given would be treated with utmost confidentiality.

Instruction

- Please tick or circle the most appropriate answer to each of the questions.
- Where applicable, tick all the answers which apply.

For further information kindly contact Mr. Thomas Amankwatia Essuman, the researcher on the following address:

Tel: +233207113725

+23324162253

Email: tomessuman@gmail.com

DISSERTATION QUESTIONNAIRE

Section A. General Information

(Please tick the appropriate box)

The respondents and the firm's background.

Personnel Information

1. How many years have you used the contract document of PPA?

- A. 1 year [] B. 5 years [] C. 10 years [] D. More than 10 years []

2. What is your profession?

Quantity Surveyor [] Civil Engineer [] Project Manager []

Technical Engineer [] Others (Please specify)

3. What is your educational qualification?

A. Higher National Diploma (HND) []

B. Bachelor of Science (BSc) []

C. Master of Science (MSc) []

D. Doctor of Philosophy (PHD) []

E. Others (Please specify):

4. How long have you been preparing claims for your firm?

A. 0 – 5 years []

B. 6 – 10 years []

C. 11 – 20 years []

D. 21 – 30 years and more []

Identifying the main causes of claims in the Ghanaian Construction Industry.

5. What document is used to justify claims?

- A. Agreement form []
- B. Variation document []
- C. Contract document []
- D. All the above []
- E. Others (Please specify):

6. Please rank the following steps that contribute to constraints in contractual claims.

NO	Description	Degree of importance				
		1	2	3	4	5
A	Improper documentation					
B	Not supporting claims with contract clause					
C	Failing to notify the client of claims					
D	The contractors not understanding the contract					
E	Late submission of claims					
F	The client representative not aware, not approving the claims.					
G	No records on the claims.					
H	Suspicion of work.					
I	In substantiation of the claim					
J	Claims not having bases in the contract document					

7. What is the role of the client in claims?

- A. Is to specify what brings about claims in the contract document []
- B. To pay when the contractor put in claims of what he thinks []
- C. All the above []
- D. Others (Please specify):

8. What is the essential document that is used to justify claims?

- A. Bill form []
- B. Contract document []
- C. Report of the contractor and his team []
- D. All the above []

9. How do you keep records of claim?

- F. Computer [] Filing [] Filing and Computer [] All the above []
- Never [] Others (please specify)

10. Which of the following information helps most in the preparation and administration of a successful contractual claims? (1 is least important, 5 is most important)

No.	Description	Degree of Importance				
		1	2	3	4	5
A	Letters					
B	Meeting minute documents					
C	Weather condition records					
D	Photography					
E	Client correspondence					
F	Consultant correspondence					
G	Drawing					
H	Day work sheet					
I	Agreement document					
J	Site diary					
K	Filed report					
L	Contract modification					
M	Contract document					
N	Time records					
O	Instruction sheet					
P	National holiday records					
Q	Other (Please specify)					

11. Why is the contract document so important in the preparation of claims?
- A. Because it spells out the obligation of both the client and the contractor and the clauses of all claims. []
 - B. Because the bill form is in it. []
 - C. Because the price of the contract is in it. []
 - D. All the above []
 - E. Others (Please specify):

Identifying the significant factors that hinder proper preparation of contractual claims.

12. What is the first step to be taking in claims preparation
- A. Notifying the client. []
 - B. Prepare and submit without notification of client []
 - C. To go the client and demand your claims []
 - D. Others (please specify):
13. Do you notify the client (buyer) when a claim is identified?
- Yes [] No [] Others (please specify)
14. By what means can the contractor achieve a successful claim and avoid constraints.
- A. By quoting the clause in the contract document that support the claim []
 - B. By writing a letter or report to the client []
 - C. By informing the client of the completion of the work []
 - D. Others (Please specify):

15. When do you notify the client (buyer) after contractual claim has been identify?

Within 7 days [] 7 days – 14 days [] 14 days – 28 days [] After claim had
been prepare [] Others (please specify)

16. Who is to be notified if there are claims?

Contract Administrator [] Client’s (buyer) representative [] Quantity Surveyor []
Foreman on site [] Others (please specify)

17. Please rank the following steps including any additional steps in preparing contractual claim. (1 is least important, 5 is most important)

No.	Description	Degree of Importance				
		1	2	3	4	5
A	Determination of contractual clause(s) of the claim					
B	Determination of payment clause is to be sought.					
C	Notification of the client					
D	Period of notification					
E	Other (Please specify)					

18. Please rank the following claim including any other claim based on their degree of importance found in the preparation of contractual claim.

No.	Description	Degree of Importance				
		1	2	3	4	5
A	Variation or modification of the design of the work.					
B	Variation or modification of the quality of the work.					
C	Late instruction or change of work content.					
D	Error in description or quantities or any omission in the form.					
E	Substitution of materials already brought to site.					
F	Opening up for inspection.					
G	Suspicious of the work					
H	Weather conditions					
I	Strikes					
J	Statutory undertake					
K	Other (Please specify)					

19. What is the role of the contractor in claims preparation?

- A. If he thinks he can mislead the client []
- B. Prepare and submit claim for approval with justification of the contract document clauses. []
- C. When he finds difficult to work. []
- D. Others (Please specify):

20. Tick as appropriate the type of claims that the PPA document talks about
- A. Contractual claim, Common law claims and Ex-contractual claims []
 - B. Misunderstanding claims, Common law claims and Ex-contractual claims []
 - C. Negotiation claims, Misunderstanding claims and Contractual claim []
 - D. Others (Please specify):

Procedure for the preparation and administration of good construction contractual claims by Ghanaian Building contractors.

21. How do you substantiate claim as per the standard condition of contract.
- Face to face [] Writing [] Telephone []
 - Others (please specify)

22. What document is used to justify claims?
- A. Agreement form []
 - B. Variation document []
 - C. Contract document []
 - D. Others (Please specify):

23. How can you back your claims with the contract document?
- A. By quoting the particular clause in the document that support the claim. []
 - B. By writing a letter or report to the client. []
 - C. By informing the client of your completion of the project. []
 - D. Others (please specify):

24. Who approve claims for payment?

- A. The client’s project manager []
- B. The contractor’s project manager []
- C. The foreman on site []
- D. Others (Please specify):

25. At what point do claims ceases to be taken care of?

- A. At practical completion stage []
- B. After the defect liability period []
- C. When the client inform the contractor of shortage of money []
- D. Others (Please specify):

26. The reason for unsuccessful claims or constraints

- A. No bases []
- B. Verbal instruction without confirmation []
- C. No clause is supported []
- D. Others (Please specify):

27. Please rank the following dispute resolution procedures in order of importance in resolving your claim dispute? (1 is the least important, 5 is the most important)

No.	Description	Degree of Importance				
		1	2	3	4	5
A	Mediation					
B	Conciliation					
C	Adjudication					
D	Arbitration					
E	Litigation					
F	Other (Please specify)					

28. In the event of dispute, who represent your firm?

A. One who is familiar with the condition of contract []

B. Management []

C. One who prepares the claims []

D. Others (Please specify)

29. What has been your relationship with the client after the constraints you encounter in claim?

Unfriendly [] Very unfriendly [] Cordial [] Very Cordial []