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Assessment of Construction Claims on Project Performance in Ghana

by

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MASTER OF SCIENCE

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DECLARATION

I hereby declare that this submission is my own work towards the MSc Construction 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

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DEDICATION

I devote this work to the Lord Almighty God for his guidance, my family for their love and support and my friends for their help and encouragement.

ABSTRACT

The occurrence of construction claims is inevitable given the nature of contracts formed, their complexity and the number of parties involved. However, adequate management and control of these claims ensure that construction projects are kept within budget and also avoid unnecessary delays. This is a quantitative study that was conducted in some construction firms in the Accra metropolis in the Greater Accra region with an aim of assessing the effect of construction claims on project performance in Ghana. Hence, structured questionnaires were used to obtain data to ascertain the construction claims factors, implications and strategies to control construction claims. A total number of fifty-five questionnaires were administered and fifty were retrieved representing a response rate of 90.91%. Relative Importance Index rankings was the main tool used for analysis. The findings of the research revealed that the main construction claim factors, such as late instructions, competition in terms of time, cost, quality and environmental problems, combination of design errors and scope increases and payment and budgetary. However, the main construction claims controlling strategies were: record keeping, knowledge of contract and planning and scheduling were also ascertained. The main implications of construction claims on project performance were disclosed as cost overrun of project, result in an increase in project cost, leads to abandonment of projects, rework and demolition and idling of project resources. It was therefore recommended that parties to a construction project should ensure adequate record keeping at every stage, thorough knowledge of contract and adequate planning and scheduling of all activities before project commences.

Keywords: Construction, Claims, Ghana, Performance, Project.

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CHAPTER ONE

GENERAL INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The building industry plays an imperative function in the socio-economic growth of the Ghanaian economy. According to Owusu-Sechere (2008) undertakings of the industry have many significances to the attainment of national socio-economic growth by providing facilities to improve infrastructure and most of all employment. Rameezdeen (2005) added that the industry generates income and job avenues for people and therefore the changes in the construction industry will be felt at all levels of the economy and in virtually all aspects of life. In Ghana, the building industry contributes 10.5% of the Gross Domestic Products (GDP) hired approximately 6% of the active population (Ghana Statistical Service, G.S.S- 2013). Nonetheless, in spite of its established importance, it is a disappointing fact that construction activities (projects) are still falling to achieve its objectives due to claims. Reviews conducted in the industry at different countries show that the performance of the building industry is usually substandard as a result of construction claims, China Insurance Regulatory Commission (CIRC, 2000).

As emphasized by Bakhary *et al.* (2015), the occurrence of construction claims is inescapable due to the contracts nature, complexity, parties involved, the risk as well as the gravity of time constrictions in the preparation of the contract documents and the insight of the work. Zaneldin, (2006) added that, in this multidisciplinary environment claims appears to impede the accomplishment of construction as well as causes delay in delivering projects. He further stated that, though with the most professional having knowledge of building contract and the most realistic risk-allocations system, the problem associated with claims will continue to be present if they are unwell succeeded

in preparation. Numerous studies (Tackey-Otoo, 2014; Yusuwan and Adnan, 2013; El Nemr 2001) have concluded on the main causes for claims in the construction industry. A study in the Western Canada by Semple *et al.* (1994) reveals that, change orders, like increase in scope, changes in design, extra work as well as errors; Severe weather conditions; Restricted access – which denotes to the non-availability of the task area as a result of it not being ready for the task to be carried on; and Acceleration - which refers to the attempts to mitigate delay by an increase in resources. Conversely, Khanchitvoralkul (2000) stressed on the same result and that, the average cost intensification caused by claims is roughly 7% of the contract value.

On-time completion of projects has always been an indicator of a project's success (Yusuwan and Adnan, 2013). Nonetheless, the unpredicted cases that construction projects are subjected to, due to claims hinders the smooth passage of the construction process as they further opined. According to Kamal (2014) claims in building projects result to considerable adjustment to the period of the contract, total direct and indirect cost or both and on the edge contract termination. As a result of the ongoing flood of construction claims as well as a project budget and period for achievement that are not met, substantial percentage of construction literature has been written on claims over the years (Hassanein and El Nemr, 2008). And this research has been focused on devising strategic and technological processes to analyze and manage construction claims. However, Whereas the bulk of this study has been the result of research done in Europe or North America, comparatively very little has been done in Africa, and Ghana is no exemption. This study sort to critically assess the effect of construction claims on project performance and the consequences for the industry itself as well as device a systematic claim controlling strategy within the context of the identified impact.

1.2 PROBLEM STATEMENT

Construction claims has currently become an inescapable worry in implementing construction projects in the Ghanaian construction industry and have such high implication on project performance (Djokoto *et al.*, 2014). According to Yusuwan and Adnan (2013), completing construction projects on-time has always been a yardstick for measuring of a project's success. However, the unpredicted cases that construction projects are subjected to, due to claims hinders the smooth passage of the construction process as they further opined. Zaneldin (2006) added that, construction claims immensely contribute to delaying construction projects as well as increases its costs. Claims in construction projects creates non-steady flow of work and create losses in time, effort, productivity and cost as Kamal (2014) advocated. He further stated that, construction projects claim result to considerable adjustment to the time period of the contract, total direct and indirect cost or both and on the edge contract termination. Numerous construction projects experience completion delay, and as a global phenomenon, the Ghanaian construction industry is no exemption. As such dealing with construction claims deserves serious attention and effectiveness as Chovichien and Tochaiwat (2006) opined. Tochaiwat (2005) added that, though construction claims have a significant impact on project performance yet, they are not adequately addressed. Thus the need for such planned instrument for controlling construction claims cannot be overlooked.

Consequently, the impact of construction claims needs to be assessed and its implication for the industry itself as well as devising a systematically claim controlling strategy within the context of the identified impacts in order to obtain value for money.

1.3 AIMS AND OBJECTIVES

1.3.1 Aim

The study aim was to assess the effect of construction claims on project performance in Ghana.

1.3.2 Objectives

To satisfy the above research aim the subsequent objectives were set:

1. To identify the major construction claims factors that result to disputes on construction projects in Ghana;
2. To identify the implications of construction claims on project performance and the meaning for the industry itself; and
3. To device a systematic claim controlling strategies within the context of the identified impacts.

1.4 RESEARCH QUESTIONS

The main research questions used to facilitate the study were;

1. What are the major construction claims factors that result to disputes on construction projects in Ghana?
2. What are the implications of construction claims on project performance and the implication for the industry itself?
3. What strategy can be employed to control construction claims by the Ghanaian construction industry?

1.5 SCOPE OF THE STUDY

The research focused on building contractors in the classes D1K1 and D2K2 in the Accra Metropolis in the Greater Accra Region of Ghana. This is because these classification of contractors are well established and usually undertake large volumes

of construction works. The study targeted contractors and consultants involving generally Quantity Surveyors and Architects in the Greater Accra Region.

1.6 RESEARCH METHODOLOGY

The methodology utilized a two-stage approach; desk study and field research. Consequently, the research adopted a quantitative method of enquiry (quantitative research approach). An imperative reason why this study chose quantitative method was to assist develop the scope of as well as extend our understandings from the study (Sandelowski, 2000). A literature review was steered to determine the theoretical paradigms behind the industry performance as a result of construction claims. The review also obtained reliable and scientific information from the existing literature through journals, unpublished thesis, publications of corporate bodies and books. The information gathered from the literature review, as well as the preliminary fact-finding phase influenced the development of the questionnaires used for this study.

The second stage was the field research, which targeted information as well as data collection. By employing series of questionnaires data and information was collected from building contractors with classification of D1K1 and D2K2 in the Accra Metropolis in the Greater Accra Region of Ghana. inferential and Descriptive statistical methods were employed to analyze the data collected. Relative importance index was used to analyse the data.

1.7 SIGNIFICANCE OF THE STUDY

This study would help building contractors as well as the clients in addressing challenges associated with effect of construction claims and effectively advance the performance of construction projects in the Ghanaian construction industry. Thus it is hoped that both parties would adopt and implement the necessary plan of action when such cases happened. Further, the study will add to existing knowledge by devising

claim controlling strategies for construction project in Ghana and contribute to available literature in the field of effective and efficient management of construction claims. Thus, it is hoped and believed that both parties would accept and implement the necessary plan of action when such situation arises on building projects in Ghana.

1.8 REPORT ORGANIZATION

The outline of the thesis was separated into five (5) sections, and followed the following structures. Chapter 1, "General Introduction" showed the research background and implication of construction claims on project performance in the Ghanaian construction industry. The aim research, research questions, objectives, as well as the scope are all confined in this section. Chapter 2; contained the literature review. The literature provided an extended coverage on earlier works.

These aspects of literature reviewed and attempted to tie them together. It discussed fully the main causes of construction claims in Ghana, identify the impact of construction claims on project performance and the implication for the industry itself; and device a systematic claim controlling strategy within the context of the identified impacts. Chapter 3; focused on the methodology which position it within its suitable jurisdiction. Comprehensive discussions were provided on the data collection analytical tools that would be used. Chapter 4 presented the experiential analysis of data as well as discussions from the field survey that answered all the research objectives and questions. Chapter 5 titled "Summary of findings, Conclusions and Recommendations" was a summary of the whole research endeavor by studying the core add-ups of the study to knowledge. Policy recommendations as well as restrictions of the research were also delineated.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The emergence of claims in construction projects in Ghana is not new a phenomenon to this sector. All participants in the construction industry are affected from this phenomenon as it hinders the projects from completion in the designated time and cost overrun and cause the delay in handing over these projects to their beneficiaries. Beside bad reputation for this industry, from the past years, a substantial percentage of construction literature has been written on claims (Hassanein and El Nemr, 2008).

This chapter discusses the literature review for this study. The review has been divided into several sections. The first part deals with the general introduction, a general perspective of construction claims, including classification of construction claims. The other looks at causes, effects of the construction claim and finally the chapter ends with an overview of construction claim management.

2.2 CONSTRUCTION CLAIMS: A GENERAL PERSPECTIVE

According to Hegazy (2012), construction claim in the Canadian Law Dictionary is well-defined as a "declaration to the right to change, relief, or property "or a "not able to fulfil requirements under the contract". Kululanga *et al.* (2001) indicated that the word "claim" originate from the old French word "claime", which is well-defined in the oxford English dictionary as a request for something as due; a declaration of right to something. This is echoed by Mbabazi (2004) who emphasized that, claim is a clearly written demand give in to by a contracting party in quest of extra money, time as well as other adjustment to a contract. However, according Hughes and Barber (1992) claims is a demand for payment of supposed title to which the contractor, correctly or

mistakenly, contemplates himself authorised with demand to an arrangement not yet achieved. Further, building claim is normally employed to designate any application by the contractor for payments not under the normal contract payment requirements, as when the contractor confronts extra costs and/or delays (Revay, 1990). As soon as claim is offered, the contractor as well as the owner agreed on the claim and make a change order or an alteration (Ren *et al.* 2003; Zaneldin, 2006).

The building industry encompasses of the building firms together with the numerous specialised organizations that function in it. The activities of the contracting parties could result to claim. For the past three decades, the building industry has gone through an upsurge in claims, exposures of liability as well as disagreements, with a cumulative hardship in attainment of realistic payments in an effective, economical as well as judicious manner (Barrie and Paulson, 1992). The exclusive, active and multifaceted operation of the industry inescapably results to a condition where struggles always get up, and claims are unavoidable.

Contract privity offers that parties that can file for claims against each the other are individuals confined by the contract provision (Clough *et al.*, 2005). Though, these requirements are occasionally over looked in situations where law court perceive part of carelessness or ineffectiveness.

2.3 CLASSIFICATION/TYPES OF CONSTRUCTION CLAIMS

Each claim comes with its own requirements as to the why it happened, claim performance, as well as the claim defence. Though every claim is exclusive, it is likely to group into distinct types the numerous claims that have happened on the building projects. Construction claims come in various classifications and types. Some of the classifications include;

2.3.1 Contractual Claims

Claims are originated on exact clauses in the contract terms.

- **Delay Claims**: this claims incline to be the least unstated and frequent in the construction industry (Harris and Scott, 2001). It relates to a time period on construction project for which the construction has been stretched or task not undertaken as a result of conditions not expected when parties came into agreement. A delay needs to be justifiable so that the foundation for an extra time or extra payment. Types of justifiable delay are every so often identified in the contract and naturally relate issues outside the contractor's control. The most common types of claims under delay claims comprise; different site situations, design changes, lack of labor, material and equipment, faulty plans and specifications. This will affect a contractor to increase the time period of its plan to accomplish the task under the contract. They come about as a result of extension of time (Callahan, 2010);
- **Acceleration Claims:** Building contracts plainly reveals important milestone times, date of completion together with probably liquidated damages for delay or additions for completing on time. Thus time is a key factor in project decisions. Speeding up arises when the work of the contractor is accelerated to finish a specific task earlier than planned. A contractor could rush willingly to compete the work earlier to get another, to meet bonuses for completing early. Construction claims

  that fall under acceleration claims are; directed acceleration and constructive acceleration. Situations whereby the client guides the builder to fast-track the project for early completion usually discussed to as directed increased. Together with the direct cost of the task, acceleration might lead to total loss of productivity of labour. In the building industry it is known that acceleration exertions like overtime working as well as work shift, doing out-of-sequence work, amassing

trades, and congestion on construction site leads to productivity of labour reduction, in the sense that new laborers possibly will not be used to with the work or might need working out before attaining usual productivity levels. The extra charges related with the task accelerating, laterally with the inadequacies productivity are frequently involved in acceleration claims. Constructive acceleration claim requires an additional detailed examination of the simultaneous record of project to identify the position of the work as well as the source of the delays and successive acceleration. This may well contain a general examination of project communication, job reports, meeting notes, together with change orders. These result from expediting production pace to meet the original or revised contract completion date (Sanders and Eagles, 2001);

- **Disruption claims:** this is well-defined as any alteration in the process of evaluation order expected by the builder during the period the task was bid which obstructs the builder from really carrying out in that way. Disruption is a change of material in the conditions of performance required at the period of bid from those really met, ensuing in amplified problem together with cost of performance.

  Disruption are made up of three overall ethics in regards to contract performance. Foremost, when a builder bids on a contract, it is permitted to work out with its performance, each stage of performance is hooked upon a preceding stage.

  Disruption to a stage, thus, may well have a possibly negative influence on the following stages. Secondly, contracted parties are required to liaise with each other and not delay the work of each other. A general builder devises to undertake its job in a confident way and order, plus the client has an indirect obligation not to come across, or disturb the builder's scheduled work. Additionally, when a general builder strategizes its work, he must reasonably do so. He might not make impractical

expectations about contract performance. Example, a builder cannot conclude a binding disruption claim if he has presumed that he would have solely access to the construction site when the contract documents specified that another builder would be concurrently on-site (Ibbs and Liu, 2005); and

- **Cost Claims:** Though builders in pursuit of extra charges from clients are the utmost recurrent advocates of additional cost claims, and vice versa. Occasionally, a prime contract among the client and a general builder has a conditions of price terms that needs the client to pay the realistic cost of the builder's work together with profit and overhead. Though under a fixed price agreement there might be requests about overpricing and overpayment. The cherished but doubtful exercise of front end loading needs an valuation of whether the billed amount for work done at a particular stage was reasonable and fair given the building activity to that point. Changes in the work scope also results to client cost claims. Non negotiated addons are generally identified on a cost-plus basis, further asking whether the builder has fairly charged the client for the work. Alternative type of client cost claim rises when there is a let-down to accord adequate credit to the client. Other construction contracts have clause on savings that allows a client to earn all or a share of the advantage when building costs are not as much of the initially scheduled.

  Accordingly, when a client can show that a builder has exaggerated the cost of building, the client should get well the overprice due to the savings provision. Likewise, due to scope of work reduction the question becomes whether the client was given enough credit for the reduction (Kumaraswamy, 1997).

2.3.2. Ex-Contractual Claims

These claims are not founded on the clauses in the contract terms of a, though the base of the claim might be situations that have risen out of the contract and have occasioned in loss or cost to the builder (Ex-gratia award).

2.3.3 Common Law Claims

These claims are for compensations for contract breach, tort, repudiation, indirect terms and other connected issues:

- **Changing –Site-Condition Claims:** The different conditions site of clause of the Federal Acquisition Regulation (FAR) categorises such situations into two categories. The first category “dormant physical conditions at the site differing materially from those indicated in this contract." Dormant conditions comprise natural or artificial conditions that are concealed from usual examination. The validation of category one claim is achieved by indicating that the conditions really come across vary from those anticipated, as specified by the strategies as well as specifications. category two conditions are "unidentified physical conditions at the work place of a rare condition, which vary substantially from those normally bump into, and normally documented as inhering nature of work provided for in the contract to identify category two claim, the builder must establish that the situations come upon could not be practically estimated at the time of bid (Zaneldin, 2006). At minimum two exclusions to this that make the client accountable for changing the conditions on site. Foremost, with the builder proving that the designer did not account for necessary soil test borings, the builder might have roots for a claim. Next, should the condition of the soil be so rare that any "realistic" builder could not have forecast the conditions, the builder possibly will once more be effective in his changing-site-condition claim.

2.4 CAUSES OF CONSTRUCTION CLAIMS

According to Ren *et al.* (2001) the whys and wherefores for claims are very multifaceted, and also be reviewed from industrial, social and the perspective of the project:

- **Social factors:** there is increasing pressure on the construction industry from the social order to be more modest in terms of cost, time, quality as well as environmental problems. This has resulted in making the industry to become riskier than ever;
- **Industrial factors:** many partakers, the growing projects size, improved competitiveness in tendering, increased complexity in technology, building surroundings uncertainty, unstable risk distribution, as well as multifaceted and disorganized reliant relations fostered by some construction procurement systems, results to construction claims; and
- **Project factors:** unexpected site situations, impractical scheduling together with specifications, client variations, unsatisfied responsibilities by project contributors and 'force majeure' are the direct reasons for claims (Ren *et al.* 2001).

Nonetheless, Ren *et al.* (2001) believed that from the past decades, the building industry has gone through a rise in claims, charge experiences as well as disputes, laterally with an upsurge in exertion to reach rational payments in an operative, timely and economical manner (Barrie and Paulson, 1992). Likewise, the sole, multifaceted and dynamic nature of the building industry inescapably results to a condition where wars are positive to arise, which claims are unescapable. Claims are now regarded as a common trend in the construction industry (Ho and Liu, 2004). Other construction claims are unescapable and required to contractually house unexpected variations in

project situations. Claims possibly will be established amicably; the previous occurrence of unnatural war can result to collapse into unnecessary disagreements. Such situations can also create needless and/or needless claims that extra increase unnatural conflicts and disputes. (Kyerefo, 2014).

In research by Semple *et al.* (1994) the main cause of conflict and claim in construction was a blend of increase errors in the design and scope all of which were not within the builders control as kyerefo (2014) postulated. In addition to that, in a set of highway construction projects, design defects, third party actions/inaction, and unknown conditions, represented the major causes of claims (Bramble *et al.* 1995). Similarly, Semple *et al.* (1994) shared their opinion that, the common reasons are growths in scopes, restricted access, weather conditions, as well etc. Others have also stated that, the key causes of claims are uncertain or insufficient documentation, late orders, changes by the client/employer; quantity related issues, weather inclement, as well as time delays. (Kumaraswamy and Yogeswaran, 1998). Kyerefo (2014) reported that, other scholars also have identified a great number of reasons for claims in construction together with delays caused by the client, design deficiencies, doing work more tough than what is defined in the agreement, as well as external factors such as material delays, weather, and strikes, among others. According to Pena-Mora *et al.* (2003), the underlying causes of changes and claims reported by contractors were because of contract documents, site conditions and scheduling problems. Also the increased complication as well as scale of the construction method is one of the main causes for growing the number of claims.

Jergeas and Hartman (1994) cited by Kyerefo (2014) added that factors like; insufficient bid information, late owner-supplied material or equipment, lesser excellence of drawings or specifications, as well as stop-and-go activities. To add to the causes above,

the sources of claims often lie buried within the project team. It was further argued that, most of contractors' claims are contractual in nature and frequently effect from the delays of the project (Kumaraswamy, 1997), which happens as a result of issues that are the employers charge, the contractor's own duty or by neither party (e.g. an act of god). London and McGeorge (2008) collected international major causes and the root causes of claims in a review research in Dispute Avoidance and Resolution, and is indicated below:

- **Variations to scope:** A change in scope of the projects affects both cost and time for its execution. If the scope is increased, the project requires more resources to execute it. This comes with more cost and time. The contractor can issue a claim to compensate for additional cost and time spent on the project;
- **Contract interpretation and Quality of design:** There is a contractual relationship between the contractor and the employer. If the contract is not well reviewed, interpreted and any queries that arise are not answered before the contract is signed, there is a high probability of claims arising. The quality of design can increase the number of claims that arise during the project. The project design is the guide for executing the project, ambiguities in the design can cause many conflicts and claims;
- **Extension of time claims:** An increase in time for the project requires more labour and over heads. The contractor must be compensated for his time and resources spent on the project;
- **Site conditions:** Site conditions can cause conflicts in the execution of a project. For example, excavations to be on a site with poisonous gas omission which was not known at the sign of the contract will require special methodology and

equipment to execute it. These special equipment and methods come along with extra cost and the contractor must be reimbursed. This can cause claims;

- **Late, incomplete information:** In complete instructions from the employer's staff can cause many conflicts in the execution of the project. When these instructions arrive late, the contractor may have advance or even completed what the instruction was to correct. The contractor may be required to demolish the work at his own cost which was at no fault of his. This can cause him/her to issue for a claim;
- **Obtaining approvals:** Certain works or the commencement of the project may require certain approvals. When these approvals arrive late it may affect the duration of the project. Plants, preliminaries and overhead cost are incurred whiles waiting for approvals. The contractor has to claim this cost and it may cause conflicts; and
- **Site access and Availability of resources:** During the pre-construction stage, the contractor is supposed to access the proposed site to know the location, the nearby structures, and the available resources such as light, water labour etc., this is done with the aid of the consultant and the client. Delay in access to site will extend the contract duration, this will demand an extension of time.

Collin *et al.* (1996), highlighted six key dispute areas that cause claims:

- **Payment and budget:** The contract data states the timing of the issue of interim payment certificates to the contractor. These payments also affect the contractor's budget and expenditure because he knows how to spend the money at the receipt of the payment. If the payment timing goes contrary to what was stated in the contract data, the contractor can file a claim against the client;
- **Performance:** The method of construction affects performance of a contractor. A proper method of construction enhances the smooth running of a project. When the method of construction employed by the contractor is poor, it portrays a poor

performance of the contractor. This can result to a file of claim by the client against the contractor;

- **Delay and time:** Claim can be a result of delay in any activity deemed the contractor or the client. Aside adverse weather condition that can extend the contract duration, delay in activities is the common factor. Extension of time also goes hand in hand with claim;
- **Negligence:** Professional negligence can result to a claim. The consultant is the immediate representative of the client, in view of that the consultant can give instructions to the contractor on behalf of the client. Should in case this instruction given to the contractor causes any form of damage or loss to the contractor, the contractor can file for a claim. This is because any information or instruction from the consultant should more or less influence the progress of the project but not cause any harm or damage;
- **Quality:** Quality, Cost and Time are the basic parameters of a contractor. The contractor is supposed to hand over the project to the client or the employer on time, he is also expected to work within budget and provide something that really represents the clients brief and meet the client's specification as well. The client can file a claim against the contractor if he does not deliver the quality of work expected; and
- **Administration:** Contract administration demands professionals to aid contractor deliver the project to meet client's requirements. Proper administration positively affects the delivery pace of a project. Ineffective administration slows down the pace of a project. The contactor can then file a claim against the client's administration.

Sykes (1996) emphasized two major groupings of claims:

- **Misunderstandings:** Both the contractor and the client are supposed to be on the same page, as in they must agree on every any suggestion or idea from either parties. Misunderstanding between the two parties can lead to arbitration. If the disagreement still persists, any of them can file a claim; and
- **Unpredictability:** Certain things that normally occur are not predictable. The contractor may seek for an extension of time for unpredictable events such as earthquake, rocky soil. The contractor might be aware of all these events at the time of access to site. Refusal to grant the contractor an extension of time might result to a file of claim against the client.

Bristow and Vassilopoulos (1995) also stated five (5) prime sources of claims as:

i. Unrealistic outlooks by parties; ii. Unclear documentation of contract; iii. Poor communications between project team members; iv. Lack of team spirit; and

v. Participants' failure to promptly deal with changes as well as unforeseen circumstances.

2.5 IMPLICATIONS OF CONSTRUCTION CLAIMS ON PROJECT PERFORMANCE

Project performance is an ongoing review of the efficiency and importance of a given project. As a result of several effect of construction claims come in to play. Some palpable and others impalpable effects is noticed. According to Zaneldin (2006) once a claim, presented, th9e client together with the builder can agreed on creating a modification order or disagree and make a building contract dispute. This explains that claims must not always bring conflicts to affect the project. It can be settled amicably without the need for litigation. He further emphasized that, in the United Arab Emirates

construction claims seems to humper the finishing of the building and result in delays in execution of projects. Thus construction claims delay the progress of work. Al Mohsin (2012) collected data on the most effects of claims in building projects in Oman and discovered that, when there is an extension of time it often affects the project by a proportion of 75%, also 15% of the effects were in work postponement as effects of the claims but 10% of the effects occur when there is delay in payment. However, Ndihokubwayo (2008), indicated that, 14% of site instructions contained waste as a result of variation orders, such as:

- **Acceleration:** A way to make up for the delay caused by claims, the project must be accelerated to meet the completion date. Workers are forced to work faster and harder. If extra workers are introduced in to quicken the project, before crowding may arise resulting into other inefficiencies. Contractors might try to take advantage of claiming that he suffered damages so that he/she may well make more money. (Chester and Hendrickson, 2005);
- **Delay**: Claims that arise from construction projects affects the duration of the project. This delays the project completion. According to Chester and Hendrickson, 2005, Studies into the numerous advanced as well as emerging countries have shown that delays in construction are common problems in the execution of projects (Sambasivan and Soon, 2007). Cost overruns and poor quality affects as a result of construction delay. It also results to more disagreements (Al-Khalil and Al-Ghafly, 1999), and can result to the abandonment and extended process of the project by the parties. (Aibinu and Jagboro, 2002). Also Assaf and Al-Hejji (2006) believed that delay denotes loss of client's revenue as a result of absence of production as well as other profitable facilities in time. Builders also suffer from material, higher expenses and labor costs. And this is as a results of productivity being low. In the

emerging countries particularly, research over the last ten years reveals a variety of Challenges that have constantly lead to delay in construction and cost overruns in virtually all types of building projects (Faridi and El-Sayegh, 2006). Main problems which building projects encounter are typically as a result of insufficient procurement system, lack of project management practices inadequate resources, inconsistencies between design as well as construction, change orders, lapses in communication, cultural related issues, and diverse interests of the project members;

- **Cost cutting and overruns**: construction claims tend to influence the contractor to overrun cost or cut cost incurred. According to Koushki *et al.* (2005), the sources of cost overruns are builders-related falls, material-related problems and client's' financial constraints. To reduce cost overruns, owners of the project should find an experienced consultant as well as dependable contractor to undertake the projects. Also one of the biggest costs in reducing cost cases rotate around the request for information. With poor engineering drawing, the builder will be required to give in several request for information as needed to make the drawings clearer. The chief difficulty is the inadequacies of sending request for information (RFIs). For instance, the builder will not clarify that the engineering drawings are not accurate the moment he takes them. It is expected that the workers on the site will run into problems as building begins. What precedes is a succession of time delaying stages that affect the plan. After site checks, supervisors will make a request for information and it is sent to the engineer. For a large project, the turnaround for the engineer can be weeks. This resultant in delays to the builder. The request for information procedure takes some period as there involves a number of checks to be done all along the way. Though this is ongoing, the builder must create the best

of the condition by working in other works or working around the difficulty. This will possibly slow productivity plus delay costs in sending the request for information. All of these steps are due to a claim against the client or client's representative (Chester and Hendrickson, 2005):

- **Quality degradation**: The contractor tends to work around the problem or do another works whiles waiting for the RFIs (Chester and Hendrickson, 2005). This affects the quality of work done. As a results of frequent variations, the quality of work is poor. Builders tended to compensate for the losses by doing "short cut" works;
- **Productivity degradation**: There is delay when a claim arises. The view of Chester and Hendrickson (2005) was that interruptions, delays and redirection of work has an adverse effect on the productivity of labour. These in turn can be converted into labour, or financial value (Ibbs and Liu, 2005). They further expressed that the workers' productivity of was likely to be critically affected in cases where they were needed to work actively for longer times to compensate for plan delays. Claims normally lead to interruptions together these interruptions are accountable for the productivity of labour degradation. The utmost important types of interruptions were as a result of inadequacy of materials and information as well as the work out of sequence. Inadequacy of material was stated as the furthermost grave disruption, since labour could not progress their works as well as end up idling whereas waiting for the materials. Though, the disruptive effects could not be evaded in numerous cases; and
- **Rework and demolition**: According to Clough and Sears, (1994) Demolition and rework and are common occurrences as a result of changes in building projects. When construction is ongoing or even complete, variations which are imposed

generally results to reworks as well as project completion delays. Rework and demolition are possible effects of changes in construction, contingent on the timing of the occurrence of the changes. These influences are to be anticipated as result of changes throughout the building stage.

- **Completion schedule delay:** The productivity is the quantity of output over a unit of time. Numerous scholars settle that claims can be one of the reasons behind time overruns or delays on construction project (Mohamed, 2001). A project that is completed within the earliest time attains some savings. Regrettably, each day added as a result of the occurrence of claims comes along with implies additional money.

2.6 EFFECTIVE CONSTRUCTION CLAIMS MANAGEMENT

Kululanga (2011) defined Construction claims management as a process of engaging and co-ordinating resources to improve a claim from ascertaining and examination through preparation, as well as performance, before it gets to negotiation and settlement. The main goal of the claim management development is to effectively and efficiently resolve problems. Hassanein and El Nemr (2008) shared their view that poor management of claims from contractor's team due to lack of proper procedure and

insufficient documentation for change orders can lead to loss of rights of about the fifty percent. Effective and efficient management can minimize the effect of claims on project performance. Enshassi *et al*. (2009) also expressed that, preventing arbitration and litigation in settling claim is a good solution that the successful builders must not ever forget. Contractors must try their optimum best to reduce the number of claims. This keeps them in good standing. All project members naturally have strong attention in preventing and reducing the difficulties that result to claims. The solution, therefore anticipates and avoids problems in future. If a problem has already surfaced, there is

the likelihood of the claim to reduced, if each party responds to the problem and resolves it in time. When problems arise, it is very necessary to resolve it as early as possible. Considerable claims cause damage to both the client and builder. The client might suffer loss of income, funding difficulties or of delayed. The growth and period of construction projects are impacted by disputes and claims. Disputes can cause the client to be unable to find their asset revenue as results of delays. They also affect contractors since projects' delayed come along with an increase in materials and labour costs (Marzouk and Moamen, 2009).

In light of the fact that nearly no building projects are contractually claim-free, when effectively implemented, Jergeas and Hartman (1994), established a general procedure to effectively accomplish contractual claims as well as keep differences from mounting. They include:

- **keeping of Records:** Realistic sign together with daily-progress reports, photographs as well as video films, memos, minutes of meeting, drawings, transmittals, and several others, are among the most imperative sign that should be reserved, preserved and prepared in an appropriate manner to facilitate contracts and project administration responsibilities;
- **Contract Knowledge:** regularly this is among the things ignored by builders. The builder should cautiously read and understand their requirements as well as tasks as levied by the contract. Loyalty to the contract is important and the builder must completely fulfil with all requirements of contract, particularly those that thoroughly relate to extension of time, like the variation clause, the claim clause, etc., as failure to do so reduces the probabilities of a claim's achievement;

- **Preservation of rights**: to preserve their right to a claim, a written announcement of a probable claim should be attended within the period of specified in the contract. Among the circumstances that need written notice to preserve the builder's right are; any inconsistency in contract clauses; obligations to perform work in a specific method which differs from the original; any stop work order; owner supply materials or equipment related issues; and many others;
- **Qualify change orders***;* any change order that involves extra cost should be given proper attention prior to negotiation or signing off;
- **Planning and scheduling**: the backbone of the construction project. Appropriate planning ensure resources are adequate and obtainable at any period of time required and that enough time is allowed for each task and all activities starts at proper times. As critical paths may alter as the work develops, the client as well as the consultants should be kept abreast by regularly or periodically informing the work programme; and
- **Proactive actions**: a claim conscious character is informed, as it will enable the claim management process. Practical actions include quick responses to complaints from clients, demanding written validation on any imperative verbal talk or teaching, extension of time, requests on explicable delays, records on any disagreements that arise with clients or his representatives, and clarification on any instruction or change order prior to the beginning of such additional works. Levin (1998) notified that the core difficulty of claims management is not from the in excess of all management procedure, but from the incompetence of management task at each stage. Key features consist of how to defend a planned claim, how to work out and present it with complete and thorough documentation, as well as how to discuss positively with the client and his consultant.

Ren *et al.* (2001) revised the progresses in claims management and stressed on the deficits in existing claims management methods. His outcome was targeting the requirement for advance of the efficacy of negotiating claims and proposes the use of multi consultant systems as a method to attain it. Further, they also brought out the values that clarify construction claim method and gives a general background that aims to enable assessment of construction claim method as one of the plans for adding up construction processes.

Consequently, Scott and Harris (2004) employed a different method to appreciate how builders explain their claims on building contracts together with how contract administrators measure them. This is completed by summarizing specific claim types into situations and cross-examining not only builders and contract managers, nevertheless also claims consultants, to consider their views on how the circumstances characterized by the situations should be managed. More importantly, Hassanein (2008) revealed that claims management in the Egyptian business sector has been suffering from a many of difficulties, together with lack of correct notification actions in state contracts and poor records. Change orders has really lost as a result of poor documentation. Oral change orders are present in roughly 76% of the projects; half of which resulted in loss of rights due to inappropriate documentation, which was mostly ascribed to the lack of contract responsiveness of the site team.

Enshassi *et al.* (2009) discussed that all parties including the client, consultant and contractor should fully appreciate the steps involved in a claim. Though both clients and contractors need to take thorough steps to ensure a claim never happens. They also need to be prepared and well-versed in how to identify, prepare, and defend a claim. For this reason, the claim management process should be clear and understood by all

project parties, especially the contractor so that they know how to present claims in a way that ensures receiving their rights.

CHAPTER THREE

RESEARCH METHODODLOGY

3.1 INTRODUCTION

The study method is a vital aspect of any research and entails the data in the actual study. The chapter discourses matter significant to the procedures adopted to attain the goals of the study and the general goal of the issue. The chapter highlighted on discussions of literature on patterns that update the reading's fundamental philosophical assumptions as well as the diverse study approaches existing which was employed for explaining exact problem of the research. Discussions on the advantages of the different research strategies would also be showed in light of the specific features of construction claim on project performance. The section also argued for the acceptance of procedures well suitable to construction claim which also took into practice the nature of the discussion under examination, therefore a quantitative strategy was employed.

3.2 Study Area

The research focused on building contractors in the classes D1K1 and D2K2 in the Accra Metropolis in the Greater Accra Region of Ghana. This is because these classification of contractors are well established and usually undertake large volumes of construction works. The study targeted D1KI and D2K2 firms in the Greater Accra Region, these are large companies which execute large volume of work and they mostly encounter issues regarding claims which are dealt with, hence, they constitute the right people to consider for questionnaires regarding claims.

3.3 Research Design

A research design is an outline for directing a study where the variables can be worked out to make available responses to the research questions according to Kallet, (2004).

This research employs a survey questionnaire in an effort to discourse the purposes set out in chapter one. This approach offers a quantitative picture of inclinations, opinion or the population attitudes by reviewing a sample of that population (Creswell, 2009). Quantitative research design was adopted to study the points as well as investigate the relations that exist between construction claim and project performance. Quantitative research was used in order to, collects accurate information as well as study relations between facts together with relations in accordance with concept. This was done using many data gathering performances as well as analytical methods. Preceding to the prompting of the initial study, a wide-ranging collected works review was embarked on. The literature review shielded extensively on matters constructing rounds in the discipline; particularly a broad synopsis of the Ghanaian construction industry as well as the numerous meanings in the discipline and modern works on the impacts of construction claim on project performance in the Ghanaian construction industry. The causes of construction claim were also looked at. These sections clearly highlight the factors thwarting the Ghanaian construction industry.

3.5 Population

According to Taylor-Powell (1998) a group or units of interest situated in an environment during the time of interest is a called a population. Building contractors in the classes D1K1 and D2K2 in the Accra Metropolis in the Greater Accra region of Ghana were targeted. this is because new construction developmental works are springing up and many of contractors and consultants are located there (Assah-Kissiedu *et al.,* 2010). However, these classification of contractors are well established and usually undertake large volumes of construction works. Likewise, this area is close to the researcher thus, as compared to other regions data is readily available (Assah-Kissiedu *et al.*, 2010).

The number of registered D1K1 and D2K2 building contractors according to the Ministry of Works and Housing in the Accra Metropolis was 128 as at 2014 in the Greater Accra Region.

3.5.1 Sampling Procedure

In a survey research, sampling is essential. Babbie (1990) argued that it is necessary because of time and cost constraints. In this study, as already indicated in the Chapter One, the target population is the number of D1K1 and D2K2 contractors.

In order to establish a suitable sample size, the following formula from Creative Research Systems (2003) and Ankrah (2007) was used:

$$SS = \frac{z2\ x\ p\ (1-p)}{c2}$$

Where; SS = sample size z = standardized variable p = percentage picking a choice, expressed as a decimal c = confidence interval expressed as a percentage

Here the confidence interval was set at 95% based on the reasons put forward by Maisell and Persell (1996) cited in Manu (2012). The argument was that 95% confidence interval is used to find a balance between the level of precision, resources available and usefulness of the finding. The percentage picking a choice was also assumed to be 50% which according to Manu (2012) represents the worst case scenario. Based on these assumptions the sample size is calculated as:

$$SS = \frac{1.96^{2} x\ 0.5\ (1-0.5)}{0.1^{2}}$$

$$= 96.04$$

Having known this, the required sample is then calculated. The required sample size for the questionnaire survey is 96, however, it is important to correct the figure for a more finite population. In doing so, the study draws on the formula used by Czaja and

Blair (1996) cited in Ankrah (2007). The formula is given as:

$$\text{New ss} = \frac{ss}{1+\frac{ss-1}{pop}}$$

Where:
Pop = Population
Ss = sample size

$$\text{New ss} = \frac{96.04}{1+\frac{96.04-1}{128}}$$

$$\text{New ss} = 55.12$$

Thus from the calculation, a sample size of 55 was chosen for the study. For every firm that was visited, one person was administered with questionnaire. Construction professionals like the quantity surveyors, project managers, civil engineers as well as site managers were targeted for the study as these respondents are directly involved in the construction process and have one way or the other experience claim in construction before.

3.6 Data Collection

Data collection has to do with the systematic approach use in the gathering and measuring of information from various sources in order to get an accurate and a complete picture of an interested area of study. That is, the data collection permits the researcher to answer relevant questions, evaluate outcomes and **make predictions** about future probabilities and trends. It is again essential for maintenance of the integrity of the research as it makes informed decisions and ensures **quality assertion**. The questionnaires were given by hand to respondents and they were given four (4) days to answer the questionnaires and return the filled questionnaires. After the fourth day, all respondents were personally contacted to retrieve the completed questionnaire.

3.6.1 Source of Data

Primary source of data was utilized. This was done through personal observations by visiting the project sited to administer questionnaires and interviews.

3.7 The Design and Development of Questionnaire

The questionnaire was designed by means of plain language, and was purposely designed to contain close-ended questions. This led to easiness in the questionnaire and evaded monotony which made it interesting for the respondents (Babbie, 1990). The questionnaire was in two main sections, Parts A and B. The Part A clearly talks about the respondents' background and it significant to the study as a whole.

The Part B focused on the objectives of the study and this grounded on the literature review in regards to the main causes of construction claim in Ghana, the impact of construction claims on project performance and the implication for the industry itself and systematic claim controlling strategy within the context of the identified impacts. The Likert scale Ratings was used to elicit the proper ratings. The five-point rating scale was employed as literature propose more multifaceted rating scale produces no advantages (Oppenheim, 1992 cited from Ahadzie, 2007).

3.8 Data Analysis

The retrieved questionnaire was checked to see if it is complete, readable and consistent. Afterwards, it was combined into larger units and were entered into the Statistical Packages for Social Sciences (SPSS version 21).

Continually, the results were statistically evaluated utilizing Relative Importance Index (RII) to rank the identified effects of construction claims on project performance and the implication for the industry itself. The RII is calculated using the formula:

$$\text{Relative Importance Index (RII)} = \frac{\sum W}{AN}$$

Where, W = weights given to each factor by the respondents and ranges from 1 to 5, where '1' is very low and '5' is very high.

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

N = the total number of respondents

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 INTRODUCTION

This chapter provides the results, analysis, discussions and findings of the data that was gathered. Analysis of responses was done in accordance with the objectives of the study. The field study was carried out in the Accra metropolis to assess the impact of construction claims on project performance in Ghana. Chats and tables were adopted for the analysis. Notwithstanding, fifty-five (55) sample questionnaires were designed and administered to D1K1 and D2K2 construction firms within the study area. Out of the 55 questionnaires disseminated to the construction firms, 50 questionnaires constituting 90.91% were returned.

4.2 DESCRIPTIVE ANALYSIS OF DATA (DEMOGRAPHIC)

The initial section deals with the respondents' profile and the impact such characteristics have on the outcome of the study. The subsequent part also deals with the analysis of the precise objectives of the study in relation to the assessment of construction claims on project performance in Ghana.

4.2.1 Nature of Organisation

The nature of the organisation determines the control of the business, acquisition of capital, extent of risks, the distribution of profits and losses, legal formalities, taxation payment and where legal liabilities rest (Owusu-Manu and Badu, 2011). The laws of Ghana require that firms are legally registered in order to conduct businesses. Respondents were required to specify the nature of their organisations. The results indicate that majority of respondents constituting 48% of respondents belong to private companies, 22% of respondents also belong to government departments and 16% of

respondents belong to public institutions. However, the remaining 14% of respondents also belong to public listed companies (see fig.4.1).

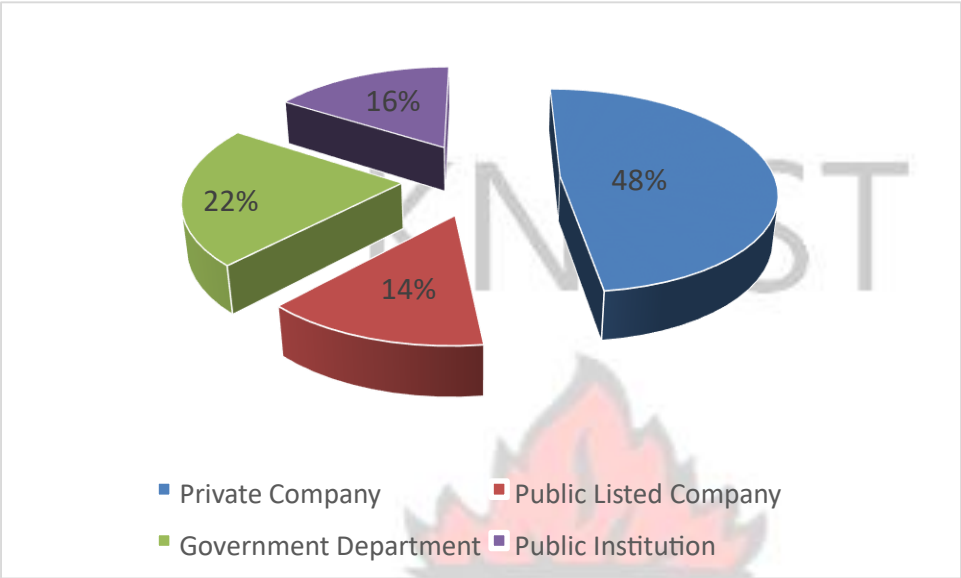

Figure 4.1: Nature of Organisation

Source: Survey data, 2016

4.2.2 Role in Firm

The purpose of this question is to identify the specific roles the respondents play within the company. Figure 4.2 established the various roles respondent play within the company and it provides the following interpretation; 19 of the respondents representing majority were Quantity Surveyors, 13 were Project Managers and 12 respondents were Civil Engineers. The remaining 6 respondents indicated they were Site Managers.

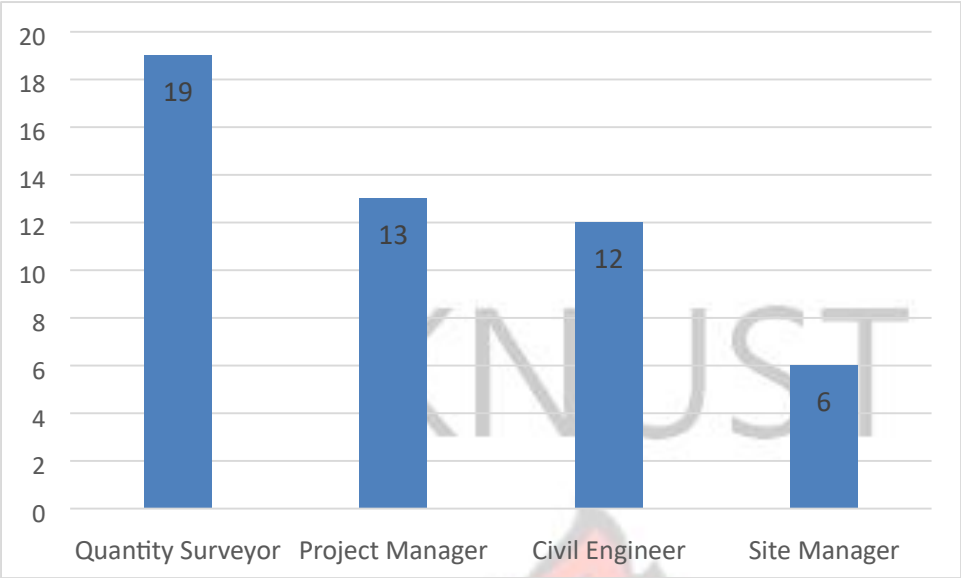

Figure 4.2: Role in Firm

Source: Survey data, 2016

4.2.3 Years in Firm

Respondents were requested to provide the number of years they had served in their various firms. This was to determine how conversant respondents were with issues relating to their various firms. 9 of the respondents indicated they had been with their firms for more than 16 years and 11 respondents indicated between 6-10 years whilst majority of the respondents indicated they had been with their firms for less than 5 years. However, it is concluded that 5 years is enough time to get acquainted with ones' firm (see figure 4.3).

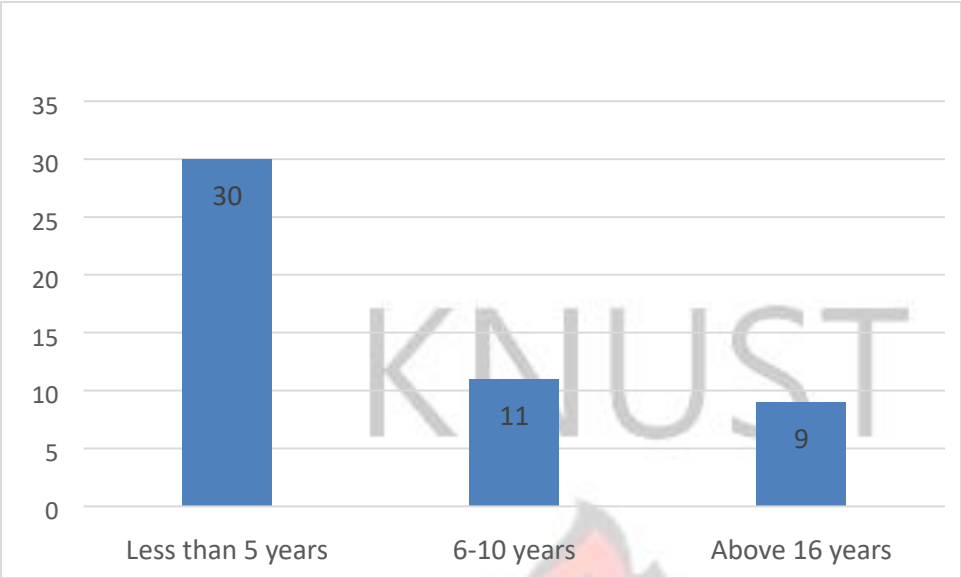

Figure 4.3: Years in Firm

Source: Survey data, 2015

4.2.4 Years in the Construction Industry

The purpose of this question is to determine the level of experience of the respondents in the construction industry since how long respondents have been in the construction industry will influence the quality of responses that would be provided. Figure 4.4 shows the number of years of the respondents in the industry. The respondents were requested to specify how long they have existed in the construction industry. 13 of the respondents indicated they have existed in the construction industry between 11-15 years, 11 respondents existed between above 16 years while 22 of the respondents representing majority specified they have also existed in the construction industry between 6-10 years. However, the outstanding 4 respondents indicated less than 5 years. This results indicate that majority of the respondents are knowledgeable in the industry and are fit to answer the questionnaire.

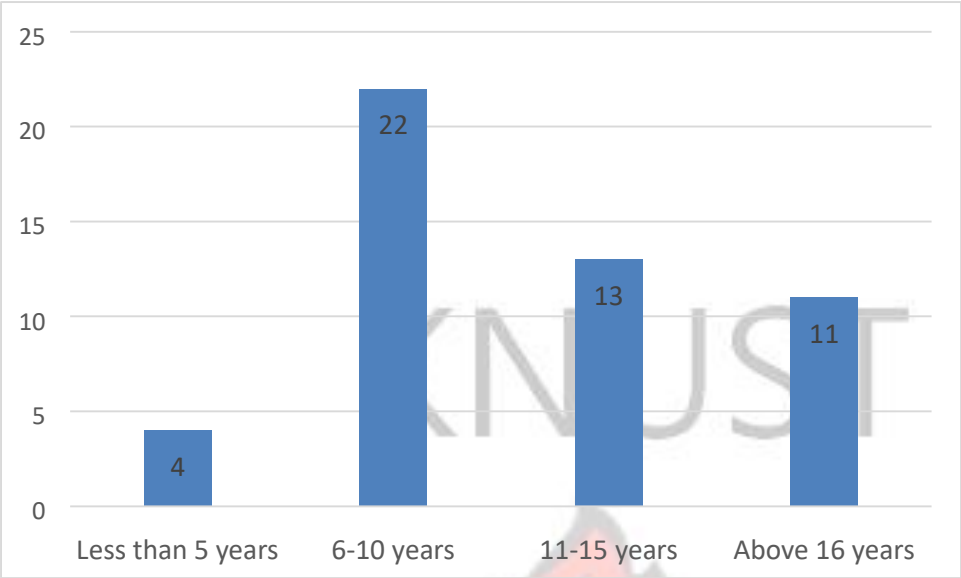

Figure 4.4: Years of existence in the Construction Industry

Source: Survey data, 2016

4.2.5 Disagreements resulting from Claims

Respondents were requested to specify whether they have had disagreements on construction projects as a result of claims. However, majority of respondents representing 82% indicated they have had disagreements on construction projects as a result of claims whilst the remaining 18% of respondents indicated they have not had any disagreements on construction projects as a result of claims. This indicates that most of the respondents had difficulties in settling issues of claims and therefore resulted in disagreements on construction projects.

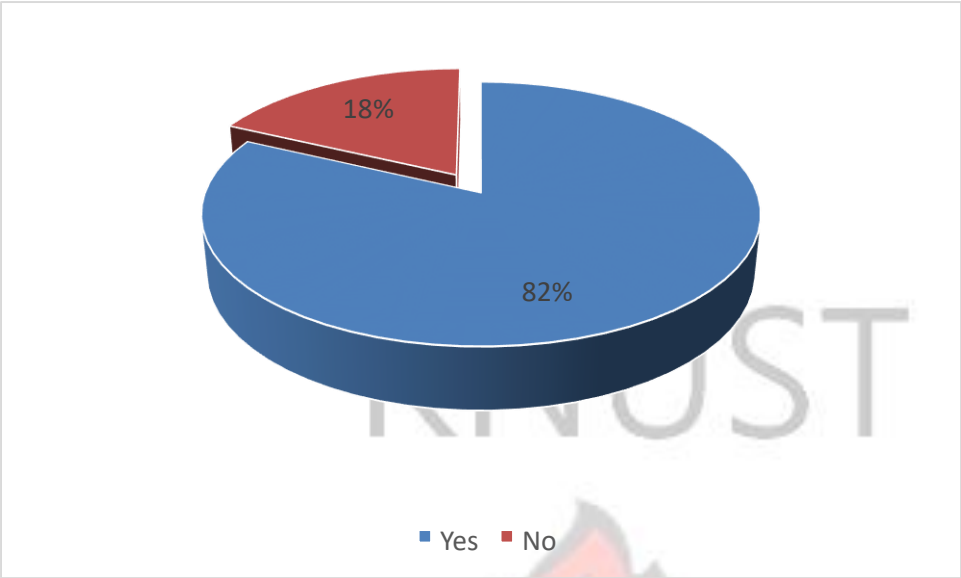

Figure 4.5: Disagreements resulting from claims

Source: Survey data, 2016

4.3 MAJOR CONSTRUCTION CLAIM FACTORS THAT RESULT IN DISPUTES

From Table 4.1, claim factors with mean score values more than 3.40 were considered to be more significant and for that matter, Late instructions is the most ranked construction claim factor by respondents, evident with an RII of 0.83 and mean value 4.14. This is closely followed by Competition in terms of time, cost, quality and environmental problem and ranked 2nd by respondents with RII of 0.78 and mean value of 3.92. This affirms Mbabazi (2004) assertion that claims are normally submitted by a contracting party to seek additional money, time and other adjustment to a contract. Unforeseeable site conditions are 3rd ranked by respondents with an RII and mean value of 0.78, 3.92 respectively. These affirm Zaneldin (2006) assertion that unforeseeable site conditions normally result in extension of time and cost and thus necessitate the submission of claims to cater for incurred cost and time. However, Combination of design errors and scope increases is ranked 4th by respondents with an RII and mean

values of 0.78, 3.90 respectively. Design errors and scope result in delays as a result of extension of time and additional cost. These additional costs are catered for by the submission of claims. Payment and budget is 5th ranked by respondents with an RII of 0.76 and a mean value of 3.82. However, Design changes and/or variations by the client is 6th ranked with an RII and mean score of (0.75, 3.74) respectively whereas Poor communications between project participants is also ranked 7th by respondents apparent with an RII of 0.74 and a mean value of 3.68. This is in confirmation to Ren *et al.* (2001) argument that most construction claims are as a result of project factors which include payment and budget issues, poor communication and changes by the client.

Furthermore, Time extension assessment also 8th ranked with an RII of 0.70 and mean score of 3.50. Complex and confused interdependent relationships brought about by some project procurement is 9th ranked with an RII of 0.69 and a mean score of 3.44. Performing work that is more difficult than what is described in the contract is the 10th claim factor by respondents with an RII of 0.67 and a mean value of 3.34. This is an indication that relationships are very vital in construction and in order to minimize claims, participants should ensure adequate and prudent relationships. Confused and complex interdependent relationships presented by some project procurement give rise massively to construction claims (Ren *et al.*, 2001).

Table 4.1: Major construction claims that result in disputes

CONSTRUCTION CLAIM FACTORS	Mean	RII	Rank
Late instructions	4.14	0.83	***1st***
Competition in terms of time, cost, quality and environmental problem	3.92	0.78	***2nd***
Unforeseeable site conditions	3.92	0.78	***3rd***
Combination of design errors and scope increases	3.90	0.78	***4th***

Payment and budget	3.82	0.76	***5th***
Design changes and/or variations by the client	3.74	0.75	***6th***
Poor communications between project participants	3.68	0.74	***7th***
Time extension assessment	3.50	0.70	***8th***
Confused and complex interdependent relationships presented about by some project procurement	3.44	0.69	***9th***
Performing work that is more difficult than what is described in the contract	3.34	0.67	***10th***
Unbalanced risk allocation	3.28	0.66	***11th***
Unfulfilled duties by project participants	3.28	0.66	***12th***
Inadequate project documentation	3.22	0.64	***13th***
Unrealistic planning and specifications	3.18	0.64	***14th***
Inadequate bid information	3.18	0.64	***15th***
Unrealistic expectations by parties	3.12	0.62	***16th***
Stop-and-go operations	3.06	0.61	***17th***
Measurement related issues	3.04	0.61	***18th***
External factors such as material delays, strike, and among others	3.02	0.60	***19th***
Negligence	2.98	0.60	***20th***
Restricted access and acceleration	2.84	0.57	***21st***
Contract interpretation and Quality of design	2.76	0.55	***22nd***
Unfavorable weather condition	2.52	0.50	***23rd***

4.4 IMPLICATIONS OF CONSTRUCTION CLAIMS ON PROJECT PERFORMANCE

From Table 4.2, Cost overrun of a project is the most ranked implication of construction claim, apparent with an RII of 0.91 and mean score of 4.56. This confirms Koushki *et al.* (2005) assertion that construction claims result in project cost overruns which tend to influence the performance of the project. This is closely followed by Result in an Increase of Project Cost with an RII of 0.89 and a mean score of 4.44, which is also quite high depicting that construction claims influence the entire project by increasing

the overall cost of the project. Leads to Abandonment of Projects is third ranked with an RII score of 0.80 and mean score of 3.98. Construction claims normally affect the project and can even lead to the total abandonment and protracted litigation of the project by the parties (Sambasivan and Soon, 2007). Rework and demolition is fourth ranked implication of claim with an RII score of 0.76 and mean score of 3.78 whilst Idling of project resources is fifth ranked by respondents with an RII score of 0.75 and a mean score of 3.76. These affirm Clough and Sears (1994) argument that rework and demolition occur frequently as a result of variations which hinder the progress of the construction project.

However, Suspension of works is ranked eighth with an RII score of 0.72 and mean score of 3.60. It is followed by Productivity degradation with an RII value of 0.72 and mean value of 3.60. This affirms Chester and Hendrickson (2005) that interruptions, delays and redirection of work has negative effects on labour productivity and greatly affects the productivity of workers. However, Programme of works interruption is the 10th ranked implication of construction claims with an RII score of 0.71 and mean score of 3.54 depicting that claims result in an interruption of the works programme which eventually affects the project duration.

Table 4.2: Implication of construction claims on project performance

IMPLICATIONS	Mean	RII	*Rank*
Cost overrun of project	4.56	0.91	***1st***
Result in an Increase of Project Cost	4.44	0.89	***2nd***
Leads to Abandonment of Projects	3.98	0.80	***3rd***

Rework and demolition	3.78	0.76	***4th***
Idling of project resources	3.76	0.75	***5th***
Creates Negative Economic Impacts	3.76	0.75	***6th***
Create cash flow problems	3.68	0.74	***7th***
Suspension of works	3.6	0.72	***8th***
Productivity degradation	3.6	0.72	***9th***
Programme of works interruption	3.54	0.71	***10th***
Quality degradation	3.52	0.70	***11th***
Create a modification order and construction contract dispute.	3.44	0.69	***12th***
Humpers the finishing of the construction and cause delays in execution of projects	3.44	0.69	***13th***
Acceleration	3.36	0.67	***14th***

4.5 CONSTRUCTION CLAIM CONTROLLING STRATEGIES

From Table 4.3, Record keeping is the most ranked strategy to control construction claims, apparent with an RII score of 0.92 and mean score of 4.58. This confirms Jergeas and Hartman (1994) assertion that factual evidence including daily-progress reports and minutes of meetings must be kept, maintained and organized in appropriate manner to enhance the administration of construction contracts. This is carefully followed by Knowledge of contract with an RII score of 0.92 and a mean score of 4.58, which is also very high signifying that having an in-depth knowledge of the contract ensures that claims are minimized to ensure a successful project execution. Marzouk and Moamen (2009) indicated that sticking to the contract is vital and parties must fully comply with all contract requirements because failure to do so exposes the contract to the chances of claims' success. Early communication of problem that results to claim is third ranked with an RII value of 0.91 and mean value of 4.45. Planning and scheduling is fourth ranked strategy with an RII value of 0.83 and mean value of 4.16 whilst Team building/partnering to establish a common objective is fifth ranked by respondents with an RII score of 0.82 and a mean score of 4.10. Scott and Harris (2004) highlighted that

planning and scheduling serves as the foundation of the project and proper planning ensures adequate resource availability and timeliness.

However, qualify change orders is ranked eighth with an RII value of 0.74 and mean value of 3.70. It is followed by Preservation of rights with an RII value of 0.73 and mean value of 3.64. Proactive actions are the least ranked strategy with an RII value of 0.72 and mean value of 3.62 indicating that respondents do not recognize proactive actions as a very significant strategy to control construction claims although Levin (1998) notified that claims management does not result from the excess of management process but from the incompetence of management activity at every phase of the construction process.

Table 4.3: Construction claims controlling strategies

STRATEGIES	Mean	RII	Rank
Record keeping	4.58	0.92	***1st***
Knowledge of contract	4.58	0.92	***2nd***
Early communication of problem that results to claim	4.54	0.91	***3rd***
Planning and scheduling	4.16	0.83	***4th***
Team building/partnering to establish a common objective	4.10	0.82	***5th***
Education on the right and obligation of parties involved	3.90	0.78	***6th***
Contract documentation adequacy	3.84	0.77	***7th***
Qualify change orders	3.70	0.74	***8th***
Preservation of rights	3.64	0.73	***9th***
Proactive actions	3.62	0.72	***10th***

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This study which basically assess the impact of construction claims on project performance in Ghana is separated into five (5) independent but correlated sections. The major overview to the study enclosed in Chapter One. The literature review on the topic which enclosed contextual overview discussions on construction claims was undertaken in Chapter two. In Chapter three, the methodology assumed for the study including the research design, study area and research strategy were deliberated. The research process was in one main phase; survey questionnaires. Chapter four offered the observed analysis and provided detailed discussions on the survey results. This chapter (Chapter five) concludes the issues addressed throughout the research. It commences with a summary of how the research objectives were achieved, the conclusion to the study. The chapter ends with recommendations for further studies that can be carried out as a result of on the conclusion of the research.

5.2 REVIEW OF RESEARCH OBJECTIVES

This research was introduced with the aim of assessing the impact of construction claims on project performance in Ghana. In an attempt to accomplish the identified aim, three study objectives were established in Section 1.3. Objectives 1, 2 and 3 were accomplished through the review of literature and the survey questionnaires which were administered. Subsequently discussions on how the objectives were accomplished follows:

5.2.1 The First Objective: To identify the major construction claims factors that result to disputes on construction projects in Ghana

The background knowledge of the major construction claims factors that result in disputes gained from literature helped to design a questionnaire to tackle the first objective, of which 23 variables were ascertained and then tried on a number of D1K1

and D2K2 construction firms in the Accra metropolis in the Greater Accra region. The questions highlighted on construction claim factors such as use of Competition in terms of time, cost, quality and environmental problem, Unforeseeable site conditions, Unrealistic planning and specifications, Design changes and/or variations by the client, Confused and complex interdependent relationships brought about by some project procurement, Unbalanced risk allocation, Unfulfilled duties by project participants, Combination of design errors and scope increases, Unfavorable weather condition, Restricted access and acceleration, Inadequate project documentation, Measurement related issues, Time extension assessment, Late instructions, Performing work that is more difficult than what is described in the contract, External factors such as material delays, strike, and among others, Inadequate bid information, Stop-and-go operations, Contract interpretation and Quality of design, Payment and budget, Negligence, Unrealistic expectations by parties and Poor communications between project participants. However, it was disclosed that the variables (i.e. 23 construction claim factors) could be measured utilizing the same primary effect. Relative Importance Index (RII) was used to rank the factors and then subsequently discussed.

5.2.2 The Second Objective: To identify the implication of construction claims on project performance and the implication for the industry itself

With the background knowledge on the implication of construction claims on project performance acquired from literature, a questionnaire was prepared to tackle the second objective, of which fourteen variables were identified which was then tried on a number of D1K1 and D2K2 contractors in the Accra metropolis in the Greater Accra region. The questions highlighted on implication of construction claims on project performance such as Create a modification order and construction contract dispute, Humpers the finishing of the construction and cause delays in execution of projects, Leads to

Abandonment of Projects, Creates Negative Economic Impacts, Result in an Increase of Project Cost, Create cash flow problems, Cost overrun of project, Suspension of works, Programme of works interruption, Idling of project resources, Acceleration, Quality degradation, Productivity degradation and Rework and demolition. It was recognized that the variables (i.e. 14 implication of construction claims on project performance) could be measured using the same primary effect. Relative Importance Index (RII) was used to rank the implications of construction claims on project performance and then subsequently discussed.

5.2.3 The Third Objective: To device a systematic claim controlling strategy within the context of the identified impacts

The background knowledge of construction claims controlling strategies gained from literature helped to design a questionnaire to tackle the third objective, of which 10 variables were discovered and then tried on a number of D1K1 and D2K2 construction firms in the Accra metropolis in the Greater Accra region. The questions highlighted on strategies such as: Record keeping, Knowledge of contract, Preservation of rights, qualify change orders, Planning and scheduling, Proactive actions, Contract documentation adequacy, Education on the right and obligation of parties involved, Early communication of problem that results to claim and Team building/partnering to establish a common objective. However, it was discovered that the variables (i.e. 10 strategies) could be measured using the same primary effect. Relative Importance Index (RII) was used to rank the strategies and then subsequently discussed.

5.3 CONCLUSION

The management of construction claims is very vital for the successful completion of construction project. However, research has shown that poor management of claims present numerous challenges which adversely affect the successful completion of

construction projects within budget and on schedule. Notwithstanding these challenges presented by construction claims, various controlling strategies could be adopted to control these claims to ensure that projects are completed with minimal claims submissions. Furthermore, adequate control of claims would ensure the successful completion of construction projects and minimize delays and disputes.

5.4 RECOMMENDATION

The implementation of construction claims in the Ghanaian construction industry have faced inescapable worry and thus have influenced project performance. Claims in construction demand total innovations in order to smoothen the operations or the activities of the construction industry. To assist in dealing with construction claims, the following recommendations were therefore prescribed by the researcher based on the findings of this research:

- Parties to a construction project must ensure adequate record keeping on every stage of the project; and
- Construction participants must ensure that there is thorough knowledge on a contract before the contract begins.

5.5 LIMITATIONS OF THE RESEARCH

These shortfalls which provide the foundation for further research are as follows:

- The restriction of the study to D1K1 and D2K2 construction firms in only the Greater region may affect the generalizations of the findings of the study; and
- The possibility of sampling together with errors in measurement and their impacts on the data collected and analysis conducted and the conclusion that was drawn.

5.6 DIRECTION FOR FUTURE RESEARCH

The study results have recognized some areas that need further studies to be undertaken. The following are therefore recommended for future research:

- Further research on effective construction claims management approaches in Ghana; and
- Further research on the enablers for the utilization of construction claims in Ghana.

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APPENDIX: SURVEY QUESTIONNAIRE

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI COLLEGE OF ART AND BUILT ENVIRONMENT Department of Building Technology

(MSc. Construction Management)

ASSESSMENT OF CONSTRUCTION CLAIMS ON PROJECT

PERFORMANCE IN GHANA

Dear Sir/Madam

Many thanks for your participation. This questionnaire survey aims at assessing the impact of construction claims on project performance in Ghana. Please fill in the questionnaire using the instructions, which will only take you about 10 to 15 minutes. Please be noted that all the information you provided is anonymous and will be only used for academic purpose. Thank you again for your valuable time. If you have any queries, please feel free to contact:

(NAME: EMMANUEL FRANK BUABENG)

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Tel: +233(0)544102640

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Section A: Background Information

Q1. Please indicate the name of your organization. (Optional)

……

Q2. Please indicate the nature of your organization.

[ ] Private Company

[ ] Public Listed Company

[ ] Government department

[ ] Public institution

Others (please specify) ……

Q3. Please indicate your role in the management of road construction projects.

[ ] Quantity Surveyor

[ ] Estimator

[ ] Project Manager

[ ] Civil Engineer

[ ] Site Manager

Others (please specify) ……

Q4. Please indicate how long have you been working in your organization. [

] Less than 5 years

[ ] 6 to 10 years

[ ] 11 to 15 years

[ ] Above 16 years

Q5. Please indicate how long have you been working in construction industry. [

] Less than 5 years

[ ] 6 to 10 years

[ ] 11 to 15 years

[ ] Above 16 years

Section B: Considering main objectives

The major construction claims factors that result to disputes on construction projects

Q6. Please indicate have you ever had any disagreement on a construction project as a result of claim?

[ ] Yes

[ ] No

Q7. In your experience, which of the following factors are the major source of construction claim that can result to disagreement on construction project? Please indicate the level of influences of each factor by ticking the appropriate boxes.

5= extremely challenging; 4=very challenging; 3=moderately challenging; 2=slightly challenging; 1= not at all challenging.

NO.	CONSTRUCTION CLAIM FACTORS	levels of influence				
		1	2	3	4	5

1	Competition in terms of time, cost, quality and environmental problem					
2	Unforeseeable site conditions					
3	Unrealistic planning and specifications					
4	Design changes and/or variations by the client					
5	Complex and confused interdependent relationships brought about by some project procurement					
6	Unbalanced risk allocation					
7	Unfulfilled duties by project participants					
8	Combination of design errors and scope increases					
9	Unfavorable weather condition					
10	Restricted access and acceleration					
11	Inadequate project documentation					
12	Measurement related issues					
13	Time extension assessment					
14	Late instructions					
15	Performing work that is more difficult than what is described in the contract					
16	External factors such as material delays, strike, and among others					
17	Inadequate bid information					
18	Stop-and-go operations					
19	Contract interpretation and Quality of design					
20	Payment and budget					
21	Negligence					
22	Unrealistic expectations by parties					
23	Poor communications between project participants					
	Others (please specify)					
24						
25						
26						

Q8. **Impact of construction claims on project performance and the implication for the industry itself**

Please kindly rate on the scale the level of agreement on the impact of construction claim on project performance and the implication for the industry itself.
5= strongly agree; 4=agree; 3=neutral; 2=disagree; 1= strongly disagree

NO.	IMPLICATION OF CONSTRUCTION CLAIM ON PROJECT PERFORMANCE	levels of influence

		1	2	3	4	5
1	Create a modification order and construction contract dispute.					
2	Humpers the finishing of the construction and cause delays in execution of projects					
3	Leads to Abandonment of Projects					
4	Creates Negative Economic Impacts					
5	Result in an Increase of Project Cost					
6	Create cash flow problems					
7	Cost overrun of project					
8	Suspension of works					
9	Programme of works interruption					
10	Idling of project resources					
11	Acceleration					
12	Quality degradation					
13	Productivity degradation					
14	Rework and demolition					
	Others (please specify)					
15						
16						
17						

Q9. **Claim controlling strategy within the context of the identified impacts**

Please kindly rate the following strategies that can be employed to control construction claim *5= extremely significant; 4=very significant; 3=moderately significant; 2=slightly significant; 1= not at all significant*

NO.	**STRATEGIES**	**levels of influence**				
		1	2	3	4	5
1	Record keeping					
2	Knowledge of contract					
3	Preservation of rights					
4	Qualify change orders					
5	Planning and scheduling					
6	Proactive actions					
7	Contract documentation adequacy					

8	Education on the right and obligation of parties involved					
9	Early communication of problem that results to claim					
10	Team building/partnering to establish a common objective					
	Others (please specify)					
11						

THANK YOU!