

**UNIVERSITY OF EDUCATION, WINNEBA  
COLLEGE OF TECHNOLOGY EDUCATION,**

**A STUDY INTO CONSTRUCTION DISPUTES AND THEIR IMPLICATIONS  
FOR PROJECT EFFICIENCY AND EXECUTION**



**BY**

**THOMAS NURO**

**JULY, 2014**

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**BY**

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**A Dissertation submitted to the Department of CONSTRUCTION AND WOOD  
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to the School of Graduate Studies, University of Education, Winneba, in partial  
fulfilment of requirement for the award of the Master of Technology  
(Construction) degree**

**JULY, 2014**

## DECLARATION

### STUDENTS' DECLARATION

I Thomas Nuro, declare that this Dissertation, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE : .....

DATE : .....

### SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guide lines for supervision of Dissertation as laid down by the University of Education, Winneba.

SIGNATURE : .....

**PROF. NICHOLAS KYEI - BAFFOUR**

DATE : .....

## **DEDICATION**

I dedicate this research work to the Lord Almighty through whose guidance and protection I have been able to reach this far in my education.

Secondly, to the people who gave meaning to my life; my parents and my friends not forgetting my wife and children.



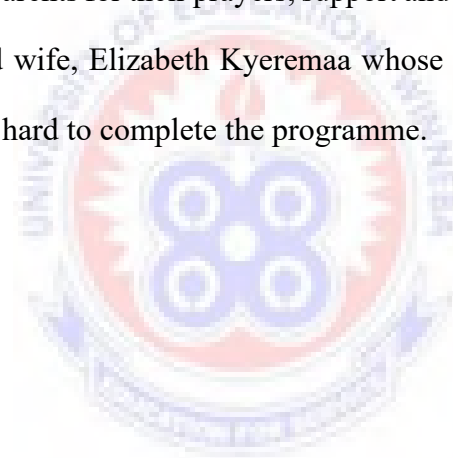
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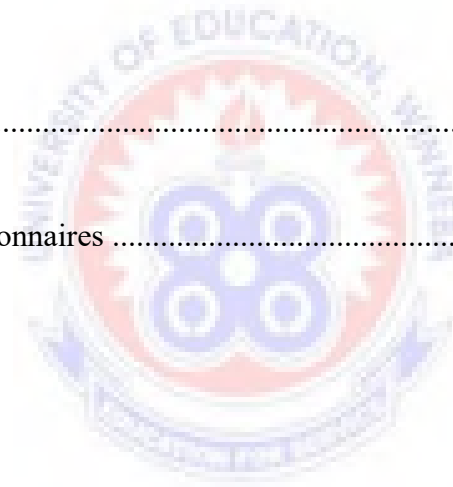
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## ABSTRACT

The rising cost, delays and time wasting as a result of construction dispute resolution prompted the author to look for efficient ways to prevent and manage these construction disputes. Prevention of disputes therefore can eliminate unnecessary crease in the cost of execution projects, delays, business relationship among the.1rticipants and finally save time. In Ghana, there has been lack of studies on ~0nstruction disputes prevention. This study therefore aims at developing appropriate strategies for disputes prevention on construction projects found in Ghana. It is important to understand the causes of dispute in the construction industry, its effects and measures to avert these conflicts that a construction projects is likely to encounter. Hence this research seeks to identify, evaluate and rank the most important and frequent factors responsible for disputes on construction projects from the perspective of Clients, Contractors and Consultants in Ghana and to identify and further develop appropriate strategies for disputes prevention in Ghana. The research comprised a questionnaire survey supplemented with face to face interview with the Clients, Contractors and Consultants with the aim of identifying the causes of disputes, effects and appropriate preventive measures to be developed to prevent the occurrence of construction disputes in Ghana. The data gathered were coded and analysed using the Statistical Package for Social Sciences (SPSS) version 17. Quantitative data were analysed by the use of relative importance index, descriptive frequency tallies and their corresponding percentage scores. Cross tabulations were further used to examine the relationship between some key variables relevant to the study. Qualitative data of the open-ended questions from the questionnaire were categorised into common themes using thematic data analysis and transcription. Thus major causes of construction dispute include behavioural problems, structural

problems and technical problems. Major means of resolving conflict in the construction industry include litigation, mediation and conciliation, arbitration, expert determination and adjudication. As a result of this, the information obtained, provided guidance for strategies to be developed within the research to provide better approach for construction dispute prevention. These strategies were as follows:

- Supervision of sub-contractors such as suppliers is needed to prevent delays of construction projects from the perspective of the contractor,
- The early involvement of all stakeholders during the design phase of the project,
- Specifications of what will constitute an acceptable finished product,
- Communicating problems or claims at the earliest opportunity and not ignoring problems as and when they occur;
- Enhancement of the processes in performing inspection and testing by consultants;
- Enhancing meaningful interaction and communication among actors and
- Early submission of drawings and specifications.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the study

Building construction and its management have become a very important aspect in today's globalised world (Chembolu, 2008). Several countries at various levels of socio-economic development have recognised the need and importance of taking measures to improve the performance of their construction industry. To this end, one of the means has been to ensure performance efficiency in construction project execution. With construction so intrinsically tied to the overall health of the world's economy, it is fundamentally important that the capital invested in construction projects helps to deliver value and outputs that support growth. There are many case-studies across the globe that demonstrates the return that construction projects can help to deliver. However, on too many occasions, these construction projects become embroiled in disputes that ultimately cost the industry millions of dollars each year (E.C. Harris, 2012).

According to Weddikkara (2003), in any construction project, the contractors' primary concern is to complete the project on time and to make a financial gain while on the other hand, the client requires a facility as good, but as economic as possible. These two aims when simply considered together seem to be contradicting, and even the procedure undertaken to achieve them may result in conflict. Furthermore, the team that come together to carry out a building project consist of members of various professional disciplines with diverse norms, standards and morally allowable patterns of behavior. It is therefore evident that, undertaking a project under such an

environment, competitive tensions can arise due to a variety of factors, which are inherent in the various contractual relationships in the construction industry.

Diekmann and Girard (1995) defined dispute in the construction industry as any contract question or controversy that must be settled beyond the jobsite management staff. The Construction Industry Institute (1995) similarly defines dispute in the construction industry as a problem or disagreement between the parties that cannot be resolved by on-site project managers. Even on the most appropriately procured and managed projects, disputes can arise. In such a scenario, how clients, contractors and consultants react will ultimately determine whether the dispute ends up being a minor inconvenience or a more serious threat to the project's success and the long-term business relationship.

The price of the building (project) is potentially and *de facto* the most frequent cause of construction disputes. In fact, these disputes include both the impacts of misunderstandings and disagreements arising from the contract provisions on the scope and time limit. Thus a dispute about the definite price (the final account) presents in fact a dispute about other factors that provide input into the final price (Matijevic, 2008). According to Matijevic (2008), parties to construction activities (consultant, client and contractor) can find themselves in a number of disputed situations regarding various circumstances: the scope and quality of works, subsequent works, excess works and works shortfalls, unforeseen works, costs of works, work completion time limits (delays), losses due to contract non-execution, or damage caused by the project outsourcing by third parties.

Ntiyakunze (2011) further provided four common root causes of construction projects dispute as primary causes that are commonly expected to cause disputes in



building projects. The second category is of causes generated by them-selves (causes that arise from the environment or state of affairs created by members in the project team). For instance, if there is poor communication or personality clashes among members in a project team, that may cause conflicts at some stage of the project life cycle. The third category is of common proximate causes (these are considered as closest or immediate factors responsible for causing conflicts in building projects). For instance, incomplete tender documents which do not prescribe the extent of work to be done will cause conflicts at the time of payment due to lack of quantities that could provide the base for payment.

The fourth category of causes of dispute in construction projects is claims. Claims are demands made for a right or requirement. If the demand is not honoured, it will aggrieve the person making such demand and hence cause conflict with the other person who is turning down the demand. Therefore, un-honoured claims such as financial claims for additional works, claims for extension of time, etc. may cause dispute in building projects. The first line of defense against construction disputes is to prevent them happening in the first place. To help clients avoid disputes, it is important to identify the potential risks on construction projects and then recommend the procurement routes and contract structures that are most likely to enable a project to run smoothly.

If disputes are not resolved promptly, they can escalate causing schedule delays, lead to claims that require litigation proceedings for resolution and this delays business relationship among the main participants. The client's projects will no longer meet the original goal and expectations, suffer from payments of high fees and also experience a delayed completion when it becomes involved in a protracted dispute. The contractor on the other hand, will not be able to achieve the profit maximization objective as he or

she will suffer financial loss from unpaid work and claims an ultimately payment of legal fees. The consultant will also be affected by the additional efforts to resolve disputes or to defend him/herself against charges of errors and omissions and eventually loose his/her professional reputation (Pinnel, 1994).

In order to prevent dispute between a contractor, consultant and a client, Little (2009) held that many verbal agreements are binding and can be upheld in court but a written contract for reference in the unfortunate instance when a contractor, consultant and client disagree is very much needed. Agreeing on the contract's terms can prevent a lot of disputes. There should be detailed specifications of what will constitute an acceptable finished product, and the contractor should be able to show that the finished work meets the specifications.

With regards to measures to resolve dispute in the construction industry, Cox (2011) held that there are dispute resolution options available to the parties to construction contract, and that some work better than others, depending on factors such as the nature of the project, the issues in dispute, the stage at which the dispute arises and the relationship of the parties. In addition to litigation, arbitration; mediation; conciliation; and expert determination are all methods of dispute resolution which are either well established or whose usage is increasing. Adjudication has also been utilised more recently as a contractual form of dispute resolution but it has also been formally proposed as a form of dispute resolution which would be available to a party as a statutory right.

The construction industry in Ghana as pointed out by Frimpong and Kwasi (2013) is a very vibrant sector and much promising, but the growth of the industry is no different from any other construction industry of a developing country. It is a critical

one due to its broad linkages with other economic sectors. Thus the construction and building industry in Ghana is rapidly developing and is a significant contributor to the national economy in terms of GDP and job creation. Construction contributes 8.6% to Ghana's GDP (2010) and provides jobs for around 2% of the workforce in 2009 (Commonwealth Network, 2013). In other words, the construction and building industry in Ghana is rapidly developing.

The construction industry in Ghana as stated by the Commonwealth Network (2013) is led by governmental development projects, dominating in terms of contracts offered and funds allocated. Indeed, construction has been identified as an important part of the national development agenda. Donor funded projects and foreign direct investment are also a significant part of the industry. There has been increasing foreign investment in the sector since 2009, particularly from the United States. In 2012, the building and construction industry had 14 American projects with a total estimated value of US\$59.3m (Commonwealth Network, 2013).

## **1.2 Statement of the problem**

Building activities are a part and parcel of every form of life and that building activities consume various resources that by their nature are scarce. Therefore, it is important that building projects are done in the most efficient and economical manner (Ntiyakunze, 2011). The success of a building project, however, depends on a number of variables. One of the key variables is the way the participants to a building project (consultant, contractor and the client) approach the problems and conflicts facing the project. According to Ayudhya (2011) the construction industry is one of the key players in driving the economy, generating both employment and wealth. However, disputes have frequently been claimed to proliferate in the construction industry.

Disputes often result in drawbacks and disharmonizations in the completion of the construction projects with considerable costs.

The economic progress of a country according to Matijevic (2008) is heavily linked to a functioning construction industry; though, as with other industries, this can be one weighed down by disputes that lead to the broadening of project completion times, immobilization of funds, bloating of costs and incremental expenditure associated with litigation. All of this can combine to erode the efficiency of the industry. Construction disputes are costly, disruptive, and too frequently lead to litigation. This can threaten the profitability of contractors and the fiscal integrity of project owners, both public and private. Furthermore, disputes over responsibility and the amount of additional costs can disrupt relationships between the clients, consultant and contractor. The result is lower productivity, further delay, strained relationships and unnecessary costs (Busch, 1994).

In Ghana, there has been lack of studies on construction disputes prevention. This study therefore aims at developing appropriate strategies for dispute prevention on construction projects found in Ghana. It is important to understand the causes of disputes in the construction industry, its effect and measures to avert these conflicts that a construction project is likely to encounter. Hence this research seeks to identify, evaluate and rank the most important, and frequent factors responsible for disputes on construction projects from the perspective of clients, contractors and consultants in Ghana and to identify and further develop appropriate strategies for disputes prevention in Ghana.

### **1.3 Research objectives**

The main objective of this study is to examine construction disputes and its implications for project efficiency and execution. Specifically, this study seeks to:

- i. Identify frequently occurring causes of disputes in the construction industry from the clients, contractors and consultants' perspective
- ii. Examine the effects of disputes on the main participants (client, contractor and consultant) and to the construction industry as a whole and
- iii. Explore the appropriate preventive measures to be developed to prevent the occurrences of construction disputes in Ghana.

### **1.4 Research Questions**

In relation to the research objectives, the following research questions are formulated to guide the study:

- i. What are the frequently occurring causes of disputes in the construction industry from the client, contractor and consultants' perspective?
- ii. What are the effects of disputes on the main participants (client, contractor and consultant) and to the construction industry as a whole?
- iii. What are the appropriate preventive measures to be developed to prevent the occurrences of construction disputes in Ghana?

### **1.5 Significance of the study**

There is a general worldwide acceptance that the severity of dispute is higher in the construction industry than in other major sectors. There is also widespread recognition that because of the high incidence of disputes, the industry is an accepted leader in the development of dispute resolution systems and processes (Lerche, 2013).

In this regard, this study is of relevance in providing the significant factors that currently impede the efficient, productive, timely and cost effective performance of construction projects as well as the root causes of disputes and practical strategies to avoid disputes or minimise the impact of disputes in the construction industry.

This would in turn be very helpful in resolving disputes in the construction industry by mediators. Thus findings of this study would help arbitrators and conflict resolution experts devise appropriate intervention strategies to help resolve conflicts among contractors, consultants and clients through the identification of the key causes of such disputes and the effectiveness of the resolution mechanisms in place. In this regard, the underlying principles of conflict management in the context of commercial disputes and practical dispute resolution strategies for facilitating the equitable, certain, amicable, timely and cost effective resolution of disputes would be brought to bear.

In academic, this study would expand the frontiers of knowledge in conflict resolution in the construction industry by improving the current thinking both nationally and internationally in relation to dispute avoidance and resolution in the construction industry. Thus in the academic fraternity, this study would contribute to the body of knowledge on causes of construction disputes and ways in which they can be prevented and reduced in Ghana.

### **1.6 Delimitation of the study**

Of the several players in the construction industry, this study shall be limited purely to the consultants, clients and contractors. This study focuses on the consultant, the client and the contractors because; available literature suggests that construction disputes are common among these three major stakeholders. This is because, in a traditional construction project, the client, consultants and the main contractor are the

primary stakeholders; hence it is most likely that disputes would always erupt among these participants.

## **1.7 Organisation of the study**

The dissertation is structured into five chapters. Chapter One is the introductory chapter. Chapter Two reviews related literature from the conceptual, empirical and theoretical perspectives. In this chapter, literature on construction disputes and its implication for construction projects efficiency and execution is reviewed. Specifically, the chapter shall review literature in relation to the concept of disputes, causes and sources of dispute in the construction industry, costs of disputes, current thinking on dispute resolution systems in general and in the construction industry, theoretical framework including the structural conflict theory, the frustration-aggression theory and the contingent theory.

The third chapter describes the study design including descriptive research designs, study population indicating the unit of analysis, sampling technique and procedure (methods of sampling the study population), research instruments (data collection instruments including structured questionnaire and interview guide), ethical consideration (ethical issues relating to the administration of questionnaires and in-depth interview including respondents anonymity and confidentiality) and methods of data analysis (plan for analysing the data obtained from the questionnaire and interviews in relation to the research questions).

Chapter Four presents the results and discussion of the findings. The discussion will be done in relation to the pertinent theories and concepts discussed in the reviewed literature, while Chapter Five focuses on the summary, conclusions and recommendations.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

The chapter identifies, describes, evaluates, and summarizes the current information in relation to construction disputes through the presentation and analysis of the empirical and theoretical sources covering causes of disputes in the construction industry as well as dispute management. Specifically, the chapter discusses the concept of disputes including background, overview and definitions of dispute. Also included is an overview of the construction industry, background to disputes in the construction industry, effects of dispute in the construction industry and dispute management as well as measures used to resolve construction disputes. The theoretical framework of the study includes the structural conflict theory, the frustration-aggression theory, and the contingent theory is reviewed finally.

#### 2.2 The Concept of Dispute

Dispute may occur along cognitive (perception), emotional (feeling), and behavioural (action) dimensions. These three dimensional perspectives can help in understanding the complexities of disputes and why a dispute sometimes seems to proceed in contradictory directions (Mayer, 2001). As a set of perceptions, dispute is a belief or an understanding that one's own needs, interest, wants or values are incompatible with someone else's. There are both objective and subjective elements to this cognitive dimension. Thus disputes involve an emotional reaction to a situation or interaction that signals disagreement of some kind. The emotion felt might be fear, sadness, bitterness, anger or hopelessness or some amalgam of these.



Another school of thought also described dispute as an action that people take to express their feelings, articulate their perceptions and get their needs met in a way that has the potential of interfering with someone else's ability to get his or her need met. This conflict behaviour may involve a direct attempt to make something happen at someone else's expense. It may be exercise of power. It may be violent or destructive. Conversely, this behaviour may be conciliatory, constructive and friendly. But whatever its tone, the purpose of dispute behaviour is either to express the conflict or to get one's needs met.

Obviously, the nature of a dispute in one dimension greatly affects its nature in the other two dimensions. People can go rapidly in and out of dispute, and the strength or characters of conflict along each dimension can change quickly and frequently. Even though each dimension affects the others, a change in the level of dispute in one dimension does not necessarily cause a similar change in the other dimensions (Mayer, 2001).

Deutsch and Coleman (2000) cited in Ramani and Zhimin (2010) also explain that dispute occurs between people in all kinds of human relationships and in all social settings. Due to the wide range of potential difference among people, the presence of dispute usually signals the absence of meaningful interaction. Judging from above, one may be tempted to say that dispute is as old as man. Dispute by itself is neither good nor bad but the manner in which it is handled determines whether it is constructive or destructive.

Dispute is also defined as an incompatibility of goals or values between two or more parties in relationship, combined with attempts to control each other and antagonistic feeling towards each other (Fisher, 1990). The incompatibility or difference may exist in reality or may only be perceived by the parties involved.

Nonetheless, the opposing actions and the hostile emotions are very real hallmarks of human conflicts. Dispute has the potential for either a great deal of destruction or much creativity and positive social change (Kriesberg, 1998). In this regard, it is very imperative, therefore, to understand the basic process of disputes, so that it can be worked to maximize productive ones and minimize destructive outcomes.

Since dispute refers to any situation in which there are incompatible goals, thoughts, or emotions with or between individuals or groups that could lead to opposition, there is the need to find ways and means of avoiding it. Attitudes and conflict styles play an important role in determining whether a conflict will lead to disruptive clash of interests or not. Mankoe (2007) argues that it is actually human to quarrel and complain and that when many people must work together dispute is inevitable. Mankoe again emphasized that whenever two or more organisations exist, there is the potential for conflict resulting from myriad causes.

According to Kirkwood (2002), various types of dispute that exist in organisations include data dispute, structural dispute, relationship dispute, and interest dispute. Conflicts can lead to disputes, grievances, lawsuits, complaints, strikes and disciplinary actions.

### **2.3 Overview of the Construction Industry**

Generally, the construction industry belongs to tertiary activities - it is a service industry (Matijevic, 2008). Matijevic (2008) further mentioned that the construction industry is divided into several activities, generally classified as follows:

- Building construction (apartments, hotels, industrial plants, hospitals, etc.)
- Civil engineering construction (roads, bridges, viaducts, revetments, etc.)

- Mounting/installation activities (electric power, water supply and sewerage, mechanical installations, etc.)
- Building-trade activities (parquet-floor laying, painting, etc.).

The complexity of construction projects and characteristics of the technology of construction, operation and maintenance of constructed facilities result in a participation of a large number of industries in construction projects. The construction industry is a driver of around 30 industries and has a multiplier effect on economic growth (Matijevic, 2008). Thus, a one percent growth rate recorded by the construction industry results in a 1.4 to 1.6 percent growth of the overall GDP, depending on the structure and development level of the entire economy. For example, the share of the construction industry in gross domestic product (GDP) depends on the development level of the overall economy and mostly amounts to 5 to 10 percent of GDP (Matijevic, 2008). Therefore, the construction industry stimulates employment, stimulates economic growth, contributes to general progress and has a stabilizing effect on the national economy.

#### **2.4 Background to Dispute in the Construction Industry**

Today's construction projects have become more complex in nature. For example, the complex, relational and lengthy process of designing and building makes construction a process in which disputes are virtually ensured (McManamy, 1994). In addition, the involvement of multidisciplinary in the construction project also leads to conflicts among the parties. Therefore, it seems that conflicts and disputes are inevitable to the construction industry, especially when most of construction projects are faced with so many uncertainties (Whitefield, 1994). The construction industry is well known

for its high levels of inter-personal and inter-organisational conflict (Gardiner & Simmons, 1992; Fenn, Lowe & Speck, 1997; Emmitt & Gorse, 2003).

The parties to construction activities can find themselves in a number of disputed situations regarding various circumstances: the scope and quality of works, subsequent works, excess works and works shortfalls, unforeseen works, costs of works, work completion time limits (delays), losses due to contract non-execution, or damage caused by the project outsourcing by third parties. Disagreements are certain to arise frequently and have a high probability of needing court resolution (Matijevic, 2008). Ayudhya (2011) also mentioned that the construction industry is one of the key players in driving the economy, generating both employment and wealth. However, disputes have frequently been claimed to proliferate in the construction industry. Disputes often result in drawbacks and disharmonizations in the completion of the construction projects with considerable cost.

Diekmann and Girard (1995) defined dispute in the construction industry as any contract question or controversy that must be settled beyond the jobsite management staff. The Construction Industry Institute (CII) similarly defines dispute in the construction industry as a problem or disagreement between the parties that cannot be resolved by on-site project managers (Construction Industry Institute, 1995). Harris (2012) made it clear that even on the most appropriately procured and managed projects, disputes can arise. In such a scenario, how clients and contractors react will ultimately determine whether the dispute ends up being a minor inconvenience or a more serious threat to the project's success and the long-term business relationship.

## **2.5 Frequently occurring causes of Disputes in the Construction Industry from the Client, Contractor and Consultants' perspective**

Delay occurs in almost every construction project and the importance of this delay varies considerably from project to project. Bramble and Callahan (1987) elucidates delay as the time during which some part of the construction project has been extended or not performed due to unanticipated circumstances. An incident of delay can originate from within the contractor's organization or from any other factors interfacing upon construction project. Some projects are only having a few days behind the schedule; some are delayed over a year. So, it is essential to define the actual causes of delay in order to minimize and avoid the delay in construction project.

Ahmed and Azhar (2013) held that delay is generally acknowledged as the most common, costly, complex and risky problem encountered in construction projects. Because of the overriding importance of time for both the owner (in terms of performance) and the contractor (in terms of money), it is the source of frequent disputes and claims leading to lawsuits. Various studies were carried out by researchers and scholars to assess the causes of delay in construction projects. They further mentioned that delays caused by the client such as late submission of drawings and specifications, frequent change orders, and incorrect/inadequate site information generate claims from both the main contractors and subcontractors which many times entail lengthy court battles with huge financial repercussions. Delays caused by contractors can generally be attributed to poor managerial skills. Lack of planning and a poor understanding of accounting and financial principles have led to many a contractor's downfall. Empirical studies to determine the causes of delays in construction projects have been carried out in the US.

According to Bartholomew (1998), many construction projects suffer from delays. Suspension means stoppage of work which is directed to the contractor from the clients, while delay is a slowing down of work without stopping it entirely. Martin (1976)

explains that delay gives rise to disruption of work and loss of productivity, late completion of project, increased time and costs of construction project, and third party claims and abandonment or termination of contract. It is important that general management keep track of project progress to reduce the possibility of delay occurrence or identify it at early stages.

According to Mohammed and Isah (2012), there are two types of delay in construction, namely: inexcusable delay and excusable delay. The inexcusable delay (Non- Excusable delay) is caused solely by the contractor or its suppliers. The contractor is generally not entitled to relief and must either make up the lost time through acceleration or compensate the owner. This compensation may come about through either liquidated damages or actual damages, provided there is no liquidated damages clause in the contract. Liquidated damages are generally expressed as a daily rate that is based on a forecast of costs the owner is likely to incur in the event of late completion by the contractor (Mohammed & Isah, 2012).

With the excusable delay, there are two types which are non-compensable and compensable delays. Non-compensable delay is caused by third parties or incidents beyond the control of both the owner and the contractor. Example typically includes acts of God, unusual weather, strikes, fires, acts of government in its sovereign capacity, etc. In this case, the contractor is normally entitled to a time extension but no compensation for delay damages (Mohammed & Isah, 2012).

Compensable delay is caused by the owner or the owner's agents. An example of this would be the late release of drawings from the owner's architect. An excusable, compensable delay usually leads to a schedule extension and exposes the owner to financial damages claimed by the contractor. In this case, the contractor incurs

additional indirect costs for both extended field office and home office overhead and unabsorbed home office overhead (Mohammed & Isah, 2012). According to Matijevic (2008), designing, preparation and construction of a building take place within a certain period of time. That period is an interval between the project commencement day and completion day. The construction duration or the period of the construction project implementation is determined by the following:

- The type and objectives of the project,
- Technical or engineering characteristics of the project,
- Size and natural conditions of the area where the project is implemented (location characteristics),
- Degree of routine quality or uniqueness of the project,
- Organizational capacities and solvency of the investor,
- Technical competence, capacity and business capability of the contractor.

Thus, if the completion time has passed and the works have not been completed, serious problems arise for the investor and the contractor (Matijevic, 2008).

Hohns (1979) believes that construction disputes have their instinct nature and characteristics, and thus the sources of disputes will vary from one project to another. In Hohns' study, five primary sources of construction disputes were listed that include existence of errors, defects or omissions in the contract documents, failure of someone to count the cost of an undertaking at the beginning, changed condition, consumer reaction and people involved. Williamson (1979) identified three large root causes of conflicts that are behavioral problems, contractual problems and technical problems due to uncertainty and low experience. According to Vorster (1993), behavioral problems include human interaction, personality, cultures and professional background

among project team. Other issues in human behaviour such as individual's ambition, frustration, dissatisfaction, desire for growth, communication and level of power, fraud and faith are also causes of disputes. Diekmann and Girard (1995) indicated that contractual disputes include definition, interpretation and clarification of the contract. Contractual issues cause a significant portion of disputes in many projects while technical disputes due to uncertainty are considered as the most common issues in project operations (Jaffar, Tharim & Shuib, 2011). According to Galbraith (1973), uncertainty is the difference between the amount of information required to do the task and the amount of information already processed by the organisation. Thus, the amount of information needed depends on the task complexity, that is, the number of different factors that have to be coordinated or performance requirements such as time or budget constraints.

Fenn, Lowe and Speck (1997) identified causes of construction disputes caused by clients, which includes failure to respond in timely manner, poor communications amongst members of the team, inadequate tracing mechanisms for request of information, deficient management, supervision and coordination efforts on the part of the project, lowest price mentality in engagement of contractors and designers, the absence of team spirit among the participants, reluctance to check for constructability, clarity and completeness, failure to appoint a project manager and also discrepancies or ambiguities in contract documents.

## **2.6 The effects of Disputes on the main participants (Client, Contractor and Consultant) and the Construction Industry as a whole**

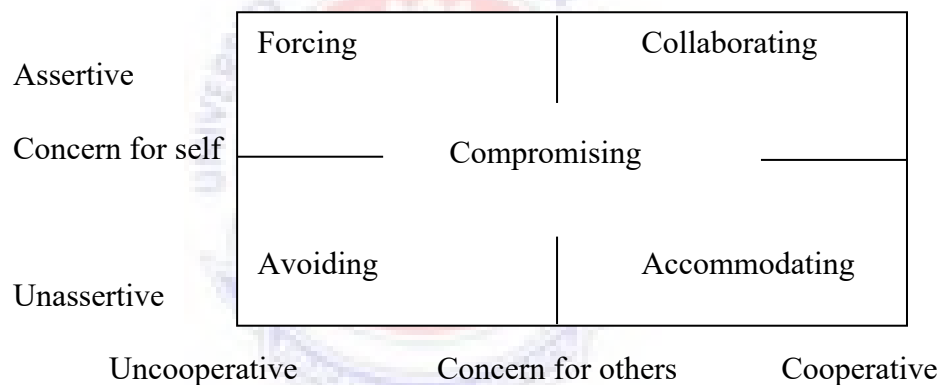
Conflict produce tension and distracts team members from performing the task (Hackman & Morris, 1975; Wall & Callister, 1995). According to Cheung and Suen (2002), if disputes are not properly managed, they may cause project delays,



undermined team spirit, increased project costs and above all, damaged continuing business relationships. Thus, it is not surprising that many construction stakeholders still overwhelmingly view conflict as negative and something to be avoided or resolved as soon as possible. However, many authors have pointed out that conflict is a phenomenon that may give rise not only to functional but also dysfunctional effects on individuals, groups and organisations. For the construction industry, the financial burden of interpersonal conflict may be even higher than it is for generic industry. By its very nature, the construction industry exists within an adversarial environment where conflict is unavoidable (Iyer & Jha, 2005; Ng, Pena-Mora & Tamaki, 2007; Phillips, 1985) and is often characterized by the high cost of conflict resolution (Ng et al, 2007). While quantifying costs of litigation and arbitration is straightforward - researchers estimate the annual cost to be about \$5 billion (Michel, 1998), it is the day to day conflicts, often the source of later litigation and arbitration, that are difficult to measure. In a study of 50 Indian construction firms, Iyer and Jha (2005) found that owners and contractors ranked conflict among project participants as the highest factor affecting project cost. Although the construction industry relies on formal conflict resolution processes such as mediation, arbitration and litigation, these formal mechanisms are utilized well after disputes have already escalated out of control (Thomas, 2002). Thus, crucial to running an efficient business is realizing the true value of prevention and early intervention of conflict. The cost of preventing and resolving conflict in its earliest stages is minimal compared to the cost of leaving conflict unresolved, or resolving troublesome circumstances late in the game through formal mechanisms (Thomas, 2002)

## **2.7 Conflict management**

Managing conflict means finding appropriate strategies to resolve it. If the occurrence of conflict is an everyday matter, then its management should be a daily affair. Managing conflict is thus a common activity in organisations. Effective conflict management involves more than specific techniques. The ability to understand and correctly diagnose conflict is the first step in managing it. Conflict management consists of diagnostic processes, interpersonal styles, negotiating strategies, and structural interventions that are designed to avoid unnecessary conflicts, reduce or resolve excessive conflicts, or even increase insufficient conflict (Hellriegel, Slocum, & Woodman, 1992). Womack (1998), cited in Mankoe (2007) points out that individuals attempt to manage interpersonal conflict in a variety of ways.



**Figure 1: Managing interpersonal conflict.** Source: Hellriegel, Slocum and Woodman, 1992

Figure 1 provides a basic model for understanding and comparing five interpersonal conflict-handling styles. The five interpersonal conflict-handling styles thus represent different combinations of assertiveness and cooperativeness. An individual may have natural tendency towards one or two of the styles, but can use all the styles as the context and parties change. For example, resolving a conflict with a

good friend may be different from that employed with a stranger after a minor car accident. According to Hellriegel, Slocum, and Woodman (1992), the various styles noted above can be explained as follows:

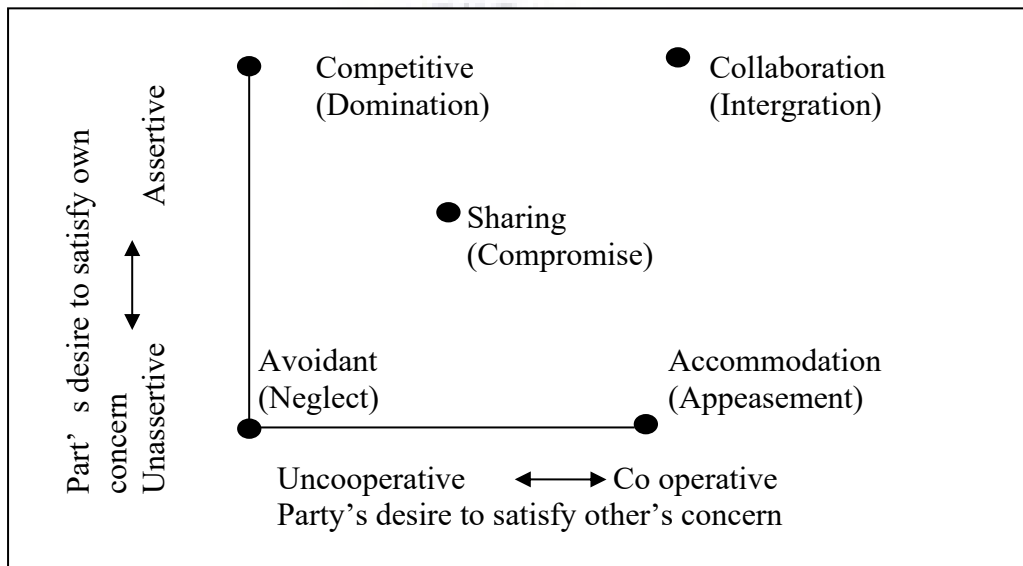
The avoiding style involves behaviour that is unassertive and uncooperative. An individual with this style chooses to stay out of conflict, ignore disagreements, or remain neutral. This approach might reflect a decision to let the conflict work itself out, or it might reflect an aversion to tension and frustration. Ignoring important issues, however, often frustrates others. The consistent use of this usually results in unfavourable evaluations by others. When unresolved conflicts affect goal accomplishment, the avoiding style will lead to negative results for the organisation. This style may be desirable under the following circumstances: When the issue is minor or only of passing importance and does not worth the individual's time or energy to confront the conflict; when there is not enough information available to the individual to effectively deal with the conflict at that time; when the individual's power is so low relative to the other person's that there is little chance for causing change; when other individuals can more effectively resolve the conflict (Hellriegel, Slocum & Woodman, 1992).

The accommodating style involves a behaviour that is cooperative but not assertive. Accommodating may mean an unselfish act, a long term strategy to encourage others to cooperate or submit to the wishes of others. Accommodators are usually favourably evaluated by other but are also perceived as weak and submissive.

The collaborating style involves behaviour that is strongly cooperative and assertive. It reflects a win-win approach to resolving a conflict. Conflicts are recognized and evaluated by all concerned. The style represents a desire to maximize joint outcomes. Collaborators tend to have the following characteristics: They see conflict as

natural, helpful, and even lead to a more creative solution if handled properly; they show trust and candour with others; they recognise that when conflict is resolved to the satisfaction of all, commitment to the solution is likely.

The compromising style involves a behaviour that is at an intermediate level in terms of cooperation and assertiveness. It is based on give and take and typically involves a series of concession. Those who compromise with others tend to be evaluated favourably. The main benefit of compromising is the quick way of dealing with a conflict. It does not maximize satisfaction, but only a partial satisfaction for each party.



**Figure 2: Kenneth Thomas' conflict management.** Source: Owens (1987)

The forcing style is a behaviour that is assertive and uncooperative. It reflects a win-lose approach to interpersonal conflict. Those who use this style try to achieve their own goals without concern for others. This style often involves aspects of coercive power and dominance. Forcing tends to result in unfavourable evaluation by others. In organisations, managers who use this style may threaten or actually use demotion, dismissal, negative performance evaluations, or punishments to gain compliance from

their subordinates. Over-reliance on forcing by a manager lessens the employee's work motivation because their interests are not considered.

## 2.8 Measures used to Resolve Construction Disputes

There is a general worldwide acceptance that the severity of dispute is higher in the construction industry than in other major sectors. There is also widespread recognition that because of the high incidence of disputes, the industry is an accepted leader in the development of dispute resolution systems and processes (Collins & London, 2007). With regards to the measures that can be used to solve disputes, Cox (2011) outlined five alternate dispute resolutions as follows:

- **Litigation:** is simply the term used to describe the resolution of disputes through the Courts. The nature and level of damages sought will generally determine what court an action will be heard in, which can have a significant impact on the speed and cost of the action. Actions in the High Court Commercial List tend to be the most actively managed. Litigation will also allow parties to an action to join other parties in, either as co-defendants or as third parties (Cox, 2011).
- **Mediation and Conciliation:** are terms which are often used interchangeably but the difference between them is not always clear. Both are based on being a without prejudice process which involves a neutral third party facilitating the parties to reach an agreed resolution to their dispute. However, in mediation, the mediator's role is purely a facilitative role. The mediator does not provide any evaluation on what the solution to the dispute should be. A conciliator on the other hand, if the parties are unable to settle the dispute, may make proposals to the parties to resolve it, usually described as a "recommendation". Generally,

the recommendation will become final and binding on the parties if it is not rejected within a limited timeframe (Cox, 2011). Collins and London (2007) also mentioned that conciliation, facilitation and mediation are usually employed once the dispute has passed through the administrative procedures and negotiations have proved unsuccessful. Each process traditionally relies on a voluntary or genuine desire to resolve as any determination from these processes is made by the disputing parties themselves and any advisory or assistance by the third party neutral being totally non-binding. Consequently any unsettled dispute can be escalated to more formally binding processes including litigation.

- **Arbitration:** is supported by a statutory framework and is commonly used in construction disputes in Ireland. The arbitrator, who usually has a construction background, effectively sits as the judge and follows procedures akin to those applied by the Courts. However, either of the parties to the arbitration is unable to force others to be joined into the arbitration unless specific provision has been made in the relevant contracts. The arbitrator's award is a binding decision which can only be challenged before the Courts in very limited circumstances (Cox, 2011).
- **Expert determination:** also results in a binding decision but differs from arbitration in that there is no statutory framework governing expert determination. The contract will generally identify the type of dispute that an independent expert will determine. It is worth noting that, unless the contract so provides, an expert is not bound by the rules of natural justice. Once the expert has rendered his decision, there are very few grounds on which it can be

appealed, even if he gets it wrong. Expert determination though can work particularly effectively in resolving technical disputes (Cox, 2011).

- **Adjudication:** is very similar to expert determination and in many cases may actually be that, save under a different name. However, statutory adjudication in the UK is considered as being distinct from expert determination as such adjudications are subject to the rules of natural justice. Adjudication allows decisions to be made promptly which are enforceable and is to be complied with, pending any final determination of the dispute by arbitration or litigation (Cox, 2011). Finlay (1998) states that direct negotiation is the original, most cost effective and most reliable form of dispute resolution. Fisher and Ury (1981) define negotiation as a basic means of getting what you want from others. The actual process of negotiation, according to, Collins and London (2007) is not defined by any strict system. It can either be through direct discussion between the disputing parties or with assistance by a third party negotiator. However, typically negotiation needs no intervention unless the dispute is escalated to other dispute resolution processes. Direct negotiation between parties without third party assistance allows the disputants to retain their privacy and independence. Fenn, O'Shea and Davies (1998) describes negotiation as a consensual process requiring a willingness of both parties to understand the others standpoint and readiness to resolve.

## 2.9 Empirical Literature

Mezher and Tawil (1998) conducted a survey on the causes of delays in the construction industry in Lebanon from the perspective of the clients, contractors and architectural/engineering firms. It was found that clients are more concerned with financial issues; contractors considered contractual relationships as the most important,

and consultants considered project management issues as the most important causes of delays.

EC Harris Contract Solutions and ARCADIS Construction Claims Consulting teams in 2011 carried out study on construction disputes handled by the teams. The research was carried out in UK, Europe, Middle East, Asia and USA (EC Harris, 2012). Thus, overall, the top five causes of disputes in construction projects in the five countries were:

1. A failure to properly administer the contract
2. Ambiguities in the contract document
3. A failure to make interim awards on extensions of time and to give associated compensation
4. Incomplete design information or employer requirements
5. Conflicting party interests.

According to E.C. Harris (2012), the study found out that progress has been made in the past twelve months, with the average value of the construction disputes reviewed in their survey decreasing by 8 percent from US\$35.1 million in 2010 to US\$32.2 million in 2011. The findings also revealed that the time required to resolve these disputes was rising, with the global average increasing by 16% from 9.1 months in 2010 to 10.6 months in 2011. In terms of what was causing these disputes, the issues most typically identified were a failure to properly administer the contract, ambiguities in the contract documents, a failure to make interim awards on extensions of time and to give associated compensation, incomplete design information or employer requirements and conflicting party interests. When it came to dispute resolution, the study found that arbitration had actually become less popular as a means of settlement



with party-to-party negotiation the most common method of resolution closely followed by mediation. Arbitration was the third most popular, with adjudication and litigation completing the top five most common methods deployed.

## **2.10 Theoretical Frameworks**

Managing dispute within the construction industry has been an age-old challenge for contractors. Recently, attention has been drawn to the level of dispute in the construction industry. Initiating a conflict management or peer mediation programme can be a proactive way to address concerns about violence. Conflicts are a natural part of life and therefore a natural part of the construction life. Learning to deal constructively with conflict is a life-skill stakeholder in the construction industry need. When contractors, clients and consultants learn to resolve their own conflicts, the atmosphere in the construction industry could be more pleasant for everyone.

Of the several theories on dispute, this study employs the social conflict theory and the contingent theory as the theoretical frameworks. The social conflict theory would enable the researcher to determine the causes of dispute in the construction industry. On the other hand, the contingent theory is used as the theoretical framework for determining the mechanisms for conflict resolution in the construction industry. A discussion of each theory is presented as follows:

### ***2.10.1 The Structural Conflict Theory***

The structural conflict theory attempts to explain conflict as a product of the tension that arises when groups must compete for scarce resources. The structural conflict theory which has been affiliated to Marxist dialectical school with exponents like Marx, Engels and Lenin has two orientations. These are the radical and the liberal system theories of conflict. The radicals headed by Marx concluded that conflict is tied to economic structures and social institutions. They consider social problems such as

political and economic exclusion, injustice, poverty, disease, exploitation, inequity among others as sources of conflict. Also Marx, Engels and Lenin contended that these problems are the major features of the capitalist system which emerge to divide the society into proletarians and the bourgeoisies. According to them, the exploitation of the proletariat by the bourgeoisies under capitalism always gives birth to conflict.

The liberal conflict theorists like Galtung, Ross and Scarborough (1990) see dispute as a reaction from individuals, groups, cultures, institutions and societies as a result of change and incompatibility of interest based on competition for resources, which in most cases is assumed to be scarce. However, the emphasis of the structural conflict theory is how the competing interest of groups ties conflict into social, economic and political organisations of society as well as the nature or strength of social networks within and between community groups. Ross (1993) noted that for instance, where economic and political discrimination and weak kinship ties define the characteristics of a society, the chances that negative forms of conflict will result are higher than in situations where the conditions are exact opposite.

Structural theory does have its usefulness in the construction industry. The theory provides a stark, clear explanation for conflict between the major stakeholders (the contractor, client and the consultant) which is always welcome when trying to make sense of chaotic events. It also provides a plausible explanation for a large agglomeration of social, economic, and political vectors that influence the contractor, client and the consultant that eventually collide in conflict (Oakland, 2009).

However, the structural theory of conflict makes sense, but only when conflicts are viewed from the broadest possible perspective, and only if the observer insists on

ignoring alternate causes to the conflict. Once the observer catalogues real conflicts of real groups, compelling additional reasons for the conflict rapidly come to light.

### ***2.10.2 The Contingency Theory***

The contingency theory of strategic conflict management, which began as an elaboration, qualification and extension of the value of symmetry, has over the last decade, emerged as an empirically tested perceptive. Contingency theory argued that the complexity in strategic communication was best represented by a continuum of stance, and not a limited set of models of excellence (Fisher & Keashly, 1998). The maturity of the contingency theory is celebrated by consolidating the developments and advances the theory has made since 1997. Pang, Jin and Cameron (2007) observed that streams of research have been extended and expanded from the original framework and record the ongoing dialogue the theory has offered to the field of conflict management and resolution to continually challenge prevailing presumptions and presuppositions.

Contingency theory in conflict resolution was pioneered by Fisher and Keashly (1998). In brief, the theory, which comes mainly from organisational psychology, is that at different points during a conflict, different types of third party interventions are more or less effective. Researches from organisational psychology analogously applied to deep rooted conflicts suggest movements at which substantive issues (interests) are most salient whereas at other times, miscommunication and misperceptions block attempts to resolution. The assumption is that subjective elements get worse as conflicts escalate.

This theory is based on the assessment that social conflict involves a dynamic process in which objective and subjective elements interact over time as the conflict escalates and deescalates. Depending on the objective – subjective

mix, different interventions will be appropriate at different state of the conflict thereby making the resolution of conflict in the construction industry more efficient and effective. Thus the contingency approaches useful in recognising that the complexity involved in understanding human and organisational systems makes it difficult to develop universal principles of management.

On a research level, contingency theory has been criticized for being theoretical. One requirement of theory is the ability to test the validity of assumptions by showing that contradictory assumptions do not disprove the theory. In a contingency framework, if contradictory results are obtained, the contingency response would be that the situation is unique or that important dimensions affecting the situation were not tested. Thus, showing that contradictory assumptions disprove the theory would be difficult at best (Hahn, 2007).

### **2.11 Lessons learnt from the Literature**

Conflict and disputes are inevitable to the construction industry, especially when most construction projects are faced with so many uncertainties. The parties to construction activities can find themselves in a number of disputed situations regarding various circumstances: the scope and quality of works, subsequent works, excess works and works shortfalls, unforeseen works, costs of works, work completion time limits (delays), losses due to contract non-execution, or damage caused by the project outsourcing by third parties.

Thus major cause of construction dispute include failure to respond in timely manner, poor communications amongst members of the team, inadequate tracing mechanisms for request of information, deficient management, supervision and coordination efforts on the part of the project, lowest price mentality in engagement of

contractors and designers, the absence of team spirit among the participants, reluctance to check for constructability, clarity and completeness, failure to appoint a project manager and also discrepancies or ambiguities in contract documents. Major means of resolving conflict in the construction industry include litigation, mediation and conciliation, arbitration, expert determination and adjudication.



## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter forms the methodological framework of the study. It describes the basic research plan for the study by explaining exactly how the study would be conducted. A thorough description of how the researcher would collect the necessary data for the study, how the study sample is obtained as well as a clear description of the

research participants is included in this chapter. In addition to the researcher describing these methods, justification for selecting these methods of research is also provided. Finally, the Chapter reports the methods and statistical tools to be used for analysing the data from the field.

### **3.2 Research Design**

The research design found most suitable and was adopted for this study is the survey method. The scientist who adopts this method aims at gathering sufficient data that can be used to describe and interpret what exists at a particular time (Lamnek, 2005). Specifically, the survey research design involves the collection of information from a sample of individuals through their responses to questions, and owes its continuing popularity to its versatility, efficiency and generalizability.

The survey method is found as the most appropriate for this study on the basis that:

- i. Surveys are efficient in that many variables can be measured without substantially increasing the time or cost.
- ii. Survey data can be collected from many people at relatively low cost and, depending on the survey design, relatively quickly.
- iii. Survey research is often the only means available for developing a representative picture of the attitudes and characteristics of a large population.

Specifically, the study adopts the survey methods because the objective of the study is to collect original data to describe a population (construction industry) which is too large to be observed directly (Rubin & Babbie, 2001). Another reason, as pointed out

by Creswell (2002), is that it has the potential to provide a lot of information from quite a large sample of individuals within a short period. Thus generally, the survey design can provide a representative picture of the attitudes and characteristics of the main actors (clients, consultants and contractors) on disputes in the construction industry and its effects on projects efficiency and execution.

### **3.3 Study Population**

The target population for the study comprises consultants, clients and contractors. These construction actors are considered for the study due to the fact that in a traditional construction project, the Clients, Consultants and the main Contractors are the primary stakeholders; hence it is most likely that dispute would always erupt among these participants.

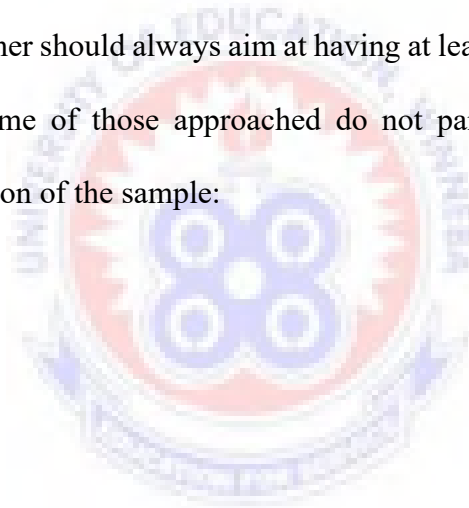
### **3.4 Sampling Technique and Sample Procedure**

The sampling of the target population for this study includes probability sampling method using the stratified random sampling. In this method, the population is stratified based on the type of actors. The strata include the client, consultant and the contractor. However, in performing the stratified random sampling methods, Probability Proportional to Size is employed using a sampling fraction in each of the type of actors that is proportional to that of the total actors in the industry. The sampling of the actors after the stratification would be done by simple random sampling. This is to ensure that each of the actors has an equal chance of being part of the sample. The study employs the stratified random sampling because:

1. The method allows for greater precision;

2. The result from each type of actor is of intrinsic interest and would be analysed separately;
3. The method guarantees a prescribed number of observations from each type of actor.

The sample size of any research has a significant impact on the accuracy and precision of the results obtained, where larger sample size are perceived to produce more accurate results (Tannor, 2011). Against this background, the researcher considered a stratified sample size of 160 as enough based on Margarete (1995) assertion that if the survey sample size falls below 30, the reliability will be low. Therefore, a researcher should always aim at having at least samples by obtaining more referrals in case some of those approached do not participate. Table 1 shows the proportional allocation of the sample:



**Table 3:1 Distribution of the sample**

Population Size	Sample
Consultants	30
Contractors	50
Clients	80



### **3.5 Sources of Data**

The source of data for the study was gathered from two main sources; primary and secondary sources. Secondary sources are economical because they save efforts and expenses, help to make primary data collection more specific since with the help of secondary data, one would be able to make out what the gaps and deficiencies are, and what additional information is needed to be collected. On the other hand, the disadvantage of secondary data is that the accuracy of secondary data is not known while data may be outdated. Specifically, the secondary source of data would be obtained from books, journals, articles and the internet among other publications.

Primary data collection methods provide original data directly from the study population and un-biased information although the method is time consuming in gathering data. Also the method requires direct and personal intervention to enhance the validity of the data obtained. Primary sources of data would be obtained during the field work directly from the study's unit of analysis using questionnaires.

### **3.6 Research instruments**

Primary data from the study is collected using a set of structured questionnaires with the objective of generalizing from the sample to the population to determine attitudes and opinions and to help understand and predict behaviour (Baker, 2001; Mokhlis, 2006). The questionnaire is administered through a face to face interview. This is considered the best form for the questionnaire administration as some of the clients may not be educated, hence cannot read and write to understand the content of

the questionnaire. The face to face administering of the questionnaire shall also pave way for further probing which is expected to improve the results from the data.

To ensure that the questionnaire is designed in all with the objectives of the study, the questionnaire is structured into seven parts. The first relates to the demographic profile of the respondents including age, gender and educational background. The second section (Section B) of the questionnaire explores the background characteristics of the respondents' business (Clients and Consultant). This focus on the number of years the respondents had been in business, the type of contracts the respondents had handled as well as the number of projects the respondents' had handled. The third section (Section C) focuses on the frequently occurring causes of disputes in the construction industry from the client, contractor and consultants' perspective. The major causes of construction disputes identified from the literature review formed the basis for constructing this section of the questionnaire.

The effects of disputes on the main participants (client, contractor and consultant) and to the construction industry as a whole form the central focus of the fourth section (Section D). Specifically, the section explores the effects of construction disputes on the main actors while the fifth section (Section E) of the questionnaire explores the methods of resolving construction disputes. The methods of resolving construction disputes identified from the literature formed the basis of constructing this section of the questionnaire. The last section of the questionnaire elicits views from the respondents regarding how disputes in the construction industry can be overcome.

In terms of wording of questions, both the closed and opened –ended items are used. Closed-ended items limit the respondent to the set of alternatives being offered, while opened- ended items allow the respondents to express an opinion without being

influenced by the researcher (Foddy, 1993). Thus the opened- ended items will allow respondents to include more information, including feelings, attitudes and understanding of the subject. However, most of the questions would be closed-ended to make data analysis easier.

### **3.7 Pre-testing of Data Collection Instruments**

Pre-testing of the questionnaire to be used for the study was done in order to test its reliability with five respondents at Sunyani. These respondents as well as their answers would not be part of the actual study process, but would only be used for testing purposes. After the questions had been answered, the respondents would be asked for any suggestions or any necessary corrections to ensure further improvement and reliability of the instrument. Minor revision of the survey questionnaires based on the suggestions of the respondents is expected to be done while irrelevant questions would be excluded. Additionally, vague or difficult terminologies in the questionnaire would be changed into simpler ones in order to ensure comprehension.

### **3.8 Ethical Consideration**

A letter of introduction would be obtained from the University of Education, Winneba, and given to the management of the selected construction firms to indicate that the researcher is an affiliate of the University and should be given the needed support. The policy of voluntary participation would be strictly adhered to throughout in this research. All participants would be informed through the instruments of the purpose of the research, how information and data collected would be handled and treated with high confidentiality, and that no individual information would be kept once the data is collated. In the same way, participants who decide to participate would be informed that they are free to withdraw and to discontinue participation at any time.

That is to say, respondents are also advised that they could withdraw from the study even during the process. With this, the participants are not forced to participate in the research.

Thus, as this study requires the participation of human respondents, certain ethical issues would be addressed. The consideration of these ethical issues is necessary for the purpose of ensuring the privacy as well as the safety of the participants. Among the significant ethical issues that are considered in the research process are consent and confidentiality. In order to secure the consent of the selected participants, the researcher shall relay all important details of the study, including its aims and purpose. The confidentiality of the participants would also be ensured by not disclosing their names or personal information in the research. Only relevant details that would help in answering the research questions would be included.

### **3.9 Methods of Data Analysis**

Before the data analysis, all questionnaires would be adequately checked for completeness. The data gathered would be coded and entered into a spreadsheet and analysed using the Statistical Package for Social Sciences (SPSS) version 17. Quantitative data analysis would involve the generation of descriptive statistics. The descriptive statistics to be included for the data analysis phase involves using descriptive frequency tallies and their corresponding percentage scores. Cross tabulations would further be used to examine the relationship between some key variables relevant to the study. Qualitative data of the open-ended questions from the questionnaire would be categorised into common themes using thematic data analysis and transcription.



#### **4.1 Introduction**

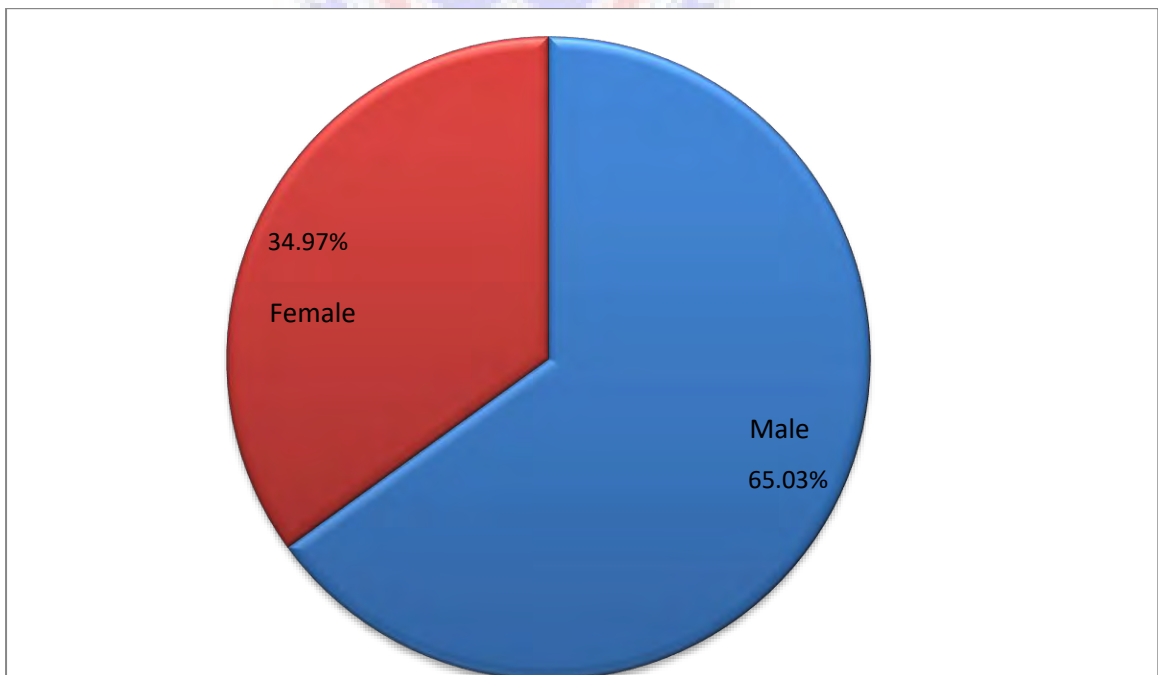
The results of the data compiled and analysed and a discussion of the results are presented in this chapter. The discussion involves the possible implications of the findings. The discussion was done in relation to the study's questions and objectives as well as relating the findings of the study to the pertinent concepts and issues discussed in the review of literature. The study investigated construction disputes and its implications for project efficiency and execution.

The results are presented in five sections based on the research questions and objectives of the study. However, the first section presents the demographic

characteristics of the respondents while the second section analysed the profile of the businesses of the respondents. The third section analysed the frequently occurring causes of disputes in the construction industry from the clients, contractors and consultants perspective. The fourth section analysed the effects of disputes on the main participants (clients, contractors and consultants) and to the construction industry as a whole, whereas conflict resolution in construction disputes was analysed in the last section.

#### 4.2 Demographic Characteristics of Respondents

This section presents the analysis and discussions of respondents' demographic characteristics. In all, 143 respondents participated in the study. This comprised 43 contractors, 30 consultants and 70 clients. In examining the demographic characteristics of the respondents, the following three variables were analysed: gender, age and education. Figure 1 illustrates the gender distribution of the respondents.



**Figure 1: Gender of respondents**

Source: Fieldwork, 2014

More than 60 percent (65.0%) of the respondents who took part in the study were males. Thus the male respondents were 30 percent higher than the female respondents. The study further explored the gender of the respondents across the consultants and the contractors

**Table 4.1: Role played across gender**

Role	Gender					
	Male		Female		Total	
	f	%	f	%	f	%
Contractor	28	65.1	15	34.9	43	100
Consultant	25	83.3	5	16.7	30	100
Total	43	58.9	30	41.1	73	100

Source: Field work, 2014

Of the 43 contractors (Table 1) who participated in the study, 65.1% were males. In other words, 34.9% of the contractors who participated in the study were females. On the other hand, of the 30 consultants that participated in the study, 83.3% were males. Generally, it can be deduced that there seemed to be more male consultants as

compared to the females in the construction industry while more females are being attracted to become contractors.

Descriptive statistical analysis of the ages of the respondents indicated an average age of 45.96 years with minimum and maximum ages of 26 years and 74 years respectively. Additionally, a standard deviation of 11.920 was obtained which gives the indication that the ages of the respondents were unclustered around the mean age. The ages of the respondents were further coded into five age groups based on the minimum and maximum ages obtained. Table 4.2 shows the ages of the respondents

**Table 4.2: Ages of respondents**

Age (y)	Frequency	Percent
26-35	31	21.7
36-45	40	28.0
46-55	37	25.9
56-65	27	18.9
66-74	8	5.6
<b>Total</b>	<b>143</b>	<b>100.0</b>

Source: Field work, 2014

An assessment of the results in Table 4.2 shows that a little over half (50.4%) of the respondents were aged at least 46 years while 49.6% were aged below 46 years.



Generally, it can be concluded from the descriptive statistics as well as the results in Table 4.2 that the respondents were matured and could be economically productive to enhance project efficiency and execution in the construction industry.

Additionally, the educational background of the respondents was examined with the results shown in Table 4.3

**Table 4. 3: Educational background of the respondents**

<b>Education</b>	<b>Frequency</b>	<b>Percent</b>
First degree	55	38.5
Second degree	30	21.0
HND	38	26.5
Secondary	20	14.0
<b>Total</b>	<b>143</b>	<b>100.0</b>

Source: Field Work, 2014

Generally, it is noted in Table 4.3 that more than half (59.5%) of the respondents had a university degree while less than 20% (14.05%) had secondary education. Further

assessment of the results in Table 4.3 gives the indication that over 80 percent (86.0%) of the respondents had tertiary educational backgrounds (at least HND). Further analysis was carried out to determine the education of the respondents across their gender. The analysis was carried out to determine whether the gender of the respondents influences their level of education. A cross tabulation was carried out with the results shown in Table 4.4



**Table 4.4: Education across gender**

Gender	Education									
	First degree		Second degree		HND		Secondary		Total	
	f	%	f	%	f	%	f	%	f	%
Male	31	33.3	20	21.6	27	29.0	15	16.1	93	100.0
Female	24	48.0	10	20.0	11	22.0	5	10.0	50	100.0
<b>Total</b>	<b>55</b>	<b>38.5</b>	<b>30</b>	<b>21.0</b>	<b>38</b>	<b>26.6</b>	<b>20</b>	<b>14.0</b>	<b>143</b>	<b>100.0</b>

Source: Field work, 2014

The most prevalent educational background among the females was first degree (48.0%) followed by second degree (20.0%) whereas among the males, the most prevalent educational background was first degree (33.3%) followed by second degree (21.6%). An assessment of the results in Table 4.4 shows that while about 68.1% of the females had a university degree, 54.9% of the males also had a university degree. Further statistical analysis using the chi-square test of independence shows that although the proportion of the females who had university degree was about 13.2% more than that of the males with the same degree, the differences in the educational background across the gender of the respondents was statistically independent of their age ( $\chi^2 = 3.332$ ,  $df = 3$  and  $p = 0.343$ ).

The study also examined the educational background of the contractors and the consultants. Of the 43 contractors who participated in the study, over 70 percent (76.7%) had university degree while of the 30 consultants, over 60 percent (65.5%) also had university degree. In relation to HND, 20.9 percent of the contractors had HND while 24.2 percent of the consultants also had HND. Furthermore, only one contractor had a secondary degree against three consultants who also had the same degree. Further statistical analysis shows that in spite of the differences noted in the educational backgrounds of the contractors and the consultants, the differences were statistically insignificant ( $\chi^2 = 2.407$ ,  $df = 3$  and  $p = 0.492$ ) and that both the consultants and the contractors had similar educational backgrounds.

#### **4.3 Profile of the respondents' business (only contractors and consultants)**

This section of the chapter performed a background analysis of the businesses of the contractors and consultants. The section was responded to by only the contractors and the consultants. The key issues analysed in this section included the number of

years for which the respondents had been in the building and construction industry, the number of projects they have handled, the sizes of the projects they have handled as well as the role they played in the projects they have handled.

Descriptive statistical analysis of how long the respondents have been engaged in the building and construction industry presented an average period of 15.58 years with minimum and maximum periods of two and 44 years respectively. A standard deviation of 11.376 was also obtained. Table 4.5 further shows detailed results of the number of years for which the respondents have been in the industry based on the minimum and maximum ages obtained.

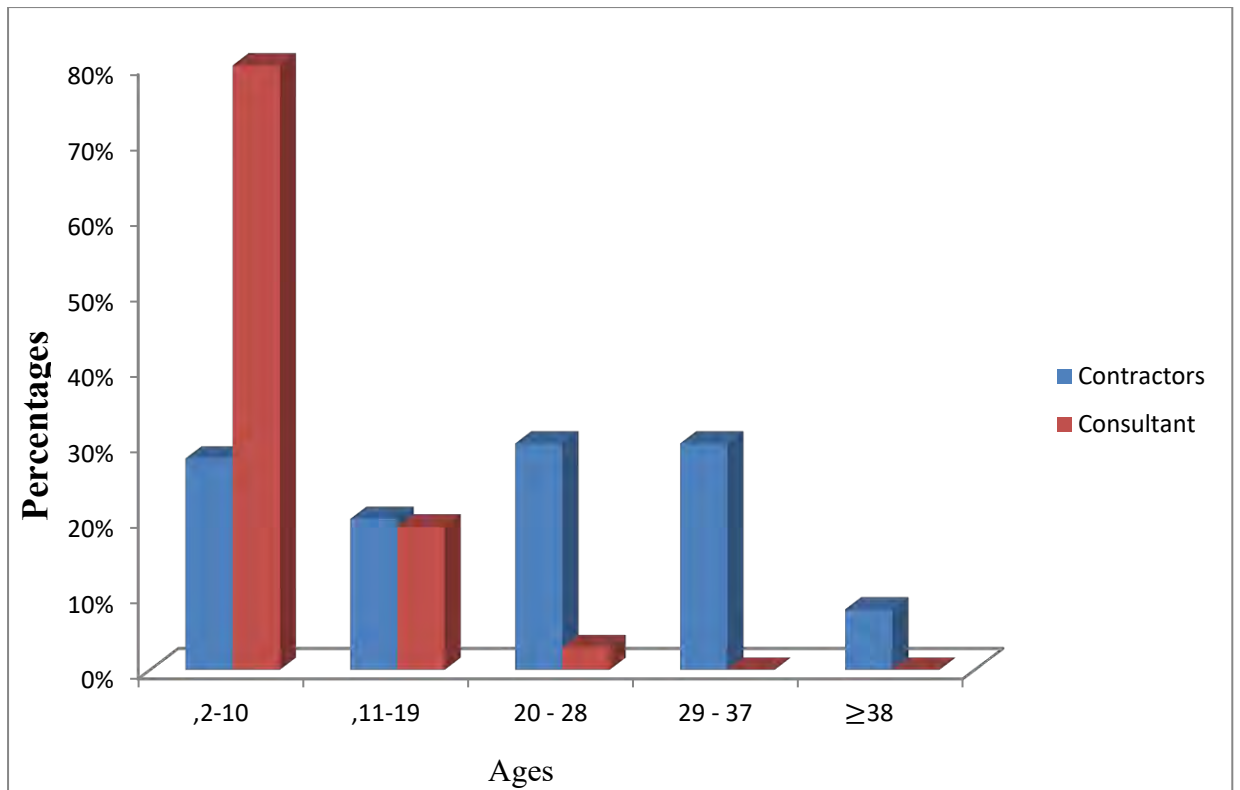
**Table 4.5: Years engaged in the building and construction industry**

<b>Years</b>	<b>Frequency</b>	<b>Percent</b>
2 – 10	34	46.6
11 – 19	13	17.8
20 – 28	12	16.4
29 – 37	11	15.1
38 and above	3	4.1
<b>Total</b>	<b>73</b>	<b>100.0</b>

Source: Field Work, 2014

The results revealed that more than 40 percent (46.6%) of the contractors and consultants have been engaged in the building and construction industry from 2 to 10 years. Further assessment shows that more than half (53.4%) of the respondents had been engaged in the building and construction industry for more than 10 years. This meant that the respondents have been in the industry for a long time. This is expected to increase the quality of the results since the long periods make the respondents more experienced in responding to how disputes in the construction industry affects project execution and efficiency.

The study also explored whether or not there are any differences in the number of years for which the respondents (contractors and consultants) have been in the industry. Of the 43 contractors, about 76.8% have been in the industry for more than 10 years, while of the 30 consultants, 79.3% had been in the industry for not more than 10 years. For example, while about 58.2% of the contractors have been in the industry for at least 20 years, only one of the consultants had been in the industry for the same period. Figure 2 shows the graphical view of the findings.



**Figure 2: Period of being in the industry across respondents (contractors and consultants)**

Source: Field Work, 2014

It is noted in Figure 2 that none of the consultants had been in the industry for at least 29 years. In other words, it is concluded that there was a statistically significant differences ( $\chi^2 = 32.381$ ,  $df = 3$  and  $p = 0.000$ ) in the number of years for which the contractors and consultants had been in the building and construction industry and that the contractors had more experience in the industry than the consultants.

Furthermore, the number of projects the contractors and consultants have been involved in was analysed. Generally, it was noted that the respondents have been involved in 34 projects with minimum and maximum projects of one project and 80 projects. Further analysis of the results is shown in Table 4.6.

**Table 4.6: Number of projects executed**

<b>Projects</b>	<b>Frequency</b>	<b>Percent</b>
1 – 10	5	6.8
11 – 20	19	26.0
21 – 30	14	19.2
31 – 40	8	11.0
41 – 50	14	19.2
Above 50	13	17.8
<b>Total</b>	<b>73</b>	<b>100.0</b>

Source: Field Work, 2014

It is noted that about 48.0% of the respondents have been involved in not less than 30 projects while 45.2% had been involved in 11-30 projects. Interestingly only five of the respondents (6.8%) had been involved in not more than 10 projects. Generally, it can be concluded that the respondents have been involved in a large number of projects. This was expected, considering the long number of years for which the respondents had been in the industry. Further analysis shows that more than 50 percent (59.5%) of the contractors had been involved in not less than 30 projects whereas more than 60 percent (65.5%) of the consultants had been involved in not more than 30 projects. The difference in the number of projects executed is explained by the fact that the contractors have had longer years of experience in the industry than the consultants.

The study explored the size of the projects the respondents had handled. Table 4.7 presents the findings.

**Table 4.7: Size of projects handled by the respondents**

<b>Size</b>	<b>Frequency</b>	<b>Percent</b>
Small	16	21.9
Medium	39	53.4
Large	18	24.7
<b>Total</b>	<b>73</b>	<b>100.0</b>

Source: Fieldwork, 2014

More than half (53.4%) of the respondents described the size of the projects they have been involved in as medium size projects. Generally, it can be deduced from Table 4.7 that the respondents had been involved in medium to large scale projects.

#### **4.4 Frequently Occurring Causes of Disputes in the Construction Industry from the Client, Contractor and Consultants' Perspective**

The parties to construction activities as mentioned by Matijevic (2008) can find themselves in a number of disputed situations regarding various circumstances such as the scope and quality of works, subsequent works, excess works and works shortfalls, unforeseen works, costs of works, work completion time limits (delays), losses due to contract non-execution, or damage caused by the project outsourcing by third parties. In this regard, this section of the chapter examined disputes that occur frequently in the construction industry. The respondents described the frequency at which conflicts occur in the construction industry between the major actors in Table 4.8.

#### **Table 4.8: Frequency of conflicts**

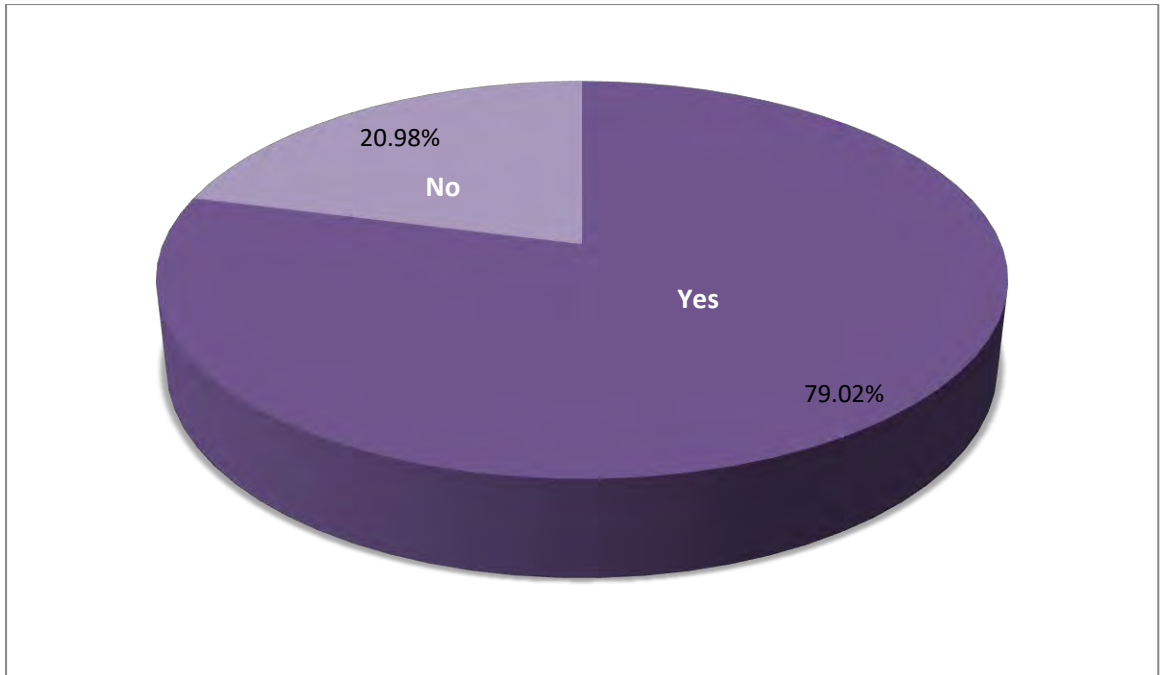


<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Always	59	41.4
Sometimes	74	51.4
Never before	10	7.2
<b>Total</b>	<b>143</b>	<b>100.0</b>

Source: Field Work, 2014

It is noted in Table 4.8 that a little over half (51.4%) of the respondents had rated the frequency at which conflicts occur in the construction industry among the major actors as 'sometimes' followed by 'always' (41.4%). This meant that conflicts in the construction industry are inevitable. In other words, disagreements and misunderstandings between contractors, consultants and clients are bound to occur. The occurrence of dispute as noted in Table 4.8 gives the indication that there is the absence of meaningful interaction among the major actors (clients, contractors and the consultants) in the building and construction industry. The results in Table 4.8 also meant that even on the most appropriately procured and managed projects, disputes can arise as indicated by Diekmann and Girard (1995). The results are consistent with that of Matijevic (2008) that parties to construction activities (consultants, clients and contractors) can find themselves in a number of disputed situations. This also meant that there have been several instances where contract question or controversies have arisen which were settled beyond the jobsite management staff. Thus there have been instances where problems or disagreements between the actors in the building and construction industry were unable to be resolved by on-site project managers.

Furthermore, the study inquired from the respondents whether they have had any conflict with any of the actors in the industry. The results are presented in Figure 3



**Figure 3: Conflict with any of the actors**

Source: Fieldwork, 2014

Majority (79.0%) of the respondents have had a conflict with actors in the construction industry. It is further seen that those who have had a conflict with actors in the construction industry were 58% higher than those who have not had any conflict with any of the actors in the industry. Further analysis also shows that of the 30 consultants who participated in the study, 82.8% have had conflicts while of the 43 contractors who also participated in the study, 93.0% have also had conflicts. This meant that conflict among the actors is inevitable supporting that of Ayudhya (2011) that disputes have frequently been claimed to proliferate in the construction industry. The results in Figure 3 also gives the indication that dispute occurs between people in all kinds of human relationships and in all social settings including the building and construction society as noted by Deutsch and Coleman (2000) as cited in Ramani and Zhimin (2010).

Further analysis was carried out on the involvement of contractors and consultants in conflicts across board and how long they have been engaged in the construction industry, the number of projects they have analysed as well as the size of the projects which the consultants and the contractors have handled. Table 4.9 shows the cross tabulation between the involvement in conflict and the number of years for which the respondents have worked in the industry.

**Table 4.9: Involvement in conflict across years in the industry**

Years	Involvement in conflict				Total	
	Yes		No		f	%
	f	%	f	%		
2 – 10	26	76.5	8	23.5	34	100.0
11 – 19	13	100.0	0	0.0	13	100.0
20 – 28	12	100.0	0	0.0	12	100.0
29 – 37	11	100.0	0	0.0	11	100.0
38 and above	3	100.0	0	0.0	3	100.0
<b>Total</b>	<b>65</b>	<b>89.0</b>	<b>8</b>	<b>11.0</b>	<b>73</b>	<b>100.0</b>

Source: Field work, 2014

It is noted in Table 4.9 that while all the respondents who have been in the industry for above 10 years have had conflicts, about 76.5% of those who have been in the industry for not more than 10 years have also had conflicts. Further chi-square analysis shows that there was a statistically significant difference ( $\chi^2 = 13.365$ ,  $df = 4$  and  $p = 0.010$ ) in the occurrence of conflicts across the periods for which the respondents have been in the industry and that although the occurrence of conflicts seemed to be

dominant across all the periods, it is deduced that the respondents who have been in the industry for longer times were more likely to have had conflicts as compared to those in it for shorter periods.

In relation to the sizes of the projects the respondents have handled, more than 80 percent of the respondents with project sizes of small (82.4%), large (88.9%) and more than 90 percent with project sizes of medium (92.1%) have all had conflicts. Further analysis shows that the occurrence of conflicts is statistically independent of the sizes of the projects the respondents have handled ( $\chi^2 = 1.073$ ,  $df = 2$  and  $p = 0.585$ ).

In this regard, the study further explored from the respondents which of the actors have disputes rampant in the industry with the results shown in Table 4.10.

**Table 4.10: Most rampant disputes common among the actors**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Client to contractor	64	44.8
Contractor to consultant	53	37.1
Consultant to client	62	43.1
Community	57	39.9

Source: Fieldwork, 2014

This variable was treated as a multiple response variable since a respondent could choose more than one option. It is noted that the most prevalent conflict was that among clients to contractors (44.8%), and consultant to clients (43.1%), while conflict among clients and consultants was the least prevalent. This gives the indication that conflict between contractors and consultants is not as common as that between clients, contractors and consultants. However, it is deduced that it is actually human to quarrel and complain and that when many people work together, disputes are inevitable as

noted by Mankoe (2007). The results in Table 10 also supports that of McManamy (1994) who asserted that the involvement of multidisciplinary terms in the construction project also leads to conflicts among the parties.

The study also explored the major causes of disputes among respondents. The following major causes dominated from the perspective of the contractors:

- Failure to meet client's requirement: Failure of the contractor to meet the project requirement of the client causes misunderstandings. In this regard, one of the contractors stated:

*“When the complete building does not meet the requirement of the client, conflict arises.”*

- Changes in design: Conflict arises when the consultant demands changes in the design during construction without contacting the client. A contractor said:

*“Some of the consultants come in to change something about the building even when they have not discussed it with the client and this brings about misunderstandings.”*

- Late communication: Information that comes later in the project causes misunderstandings. Sometimes, it is difficult to change something about the ongoing project but the client would still insist.
- Poor communication: Communicating problems at wrong times and ignoring problems as and when they occur.
- Financing projects: The cost of financing the project causes conflict with the client. A contractor said:

*“Many of the clients are not willing to pay when the contractor pre finances the project.”*

- Under certification by consultants: Under certification of the work of the contractor at interim valuations leads to conflicts.
- Issuance of honour certificate: Delays in the issue of honour certificate.

From the consultant's point of view, the major causes of disputes are:

- Incomplete drawings and specifications
- Underestimation
- Lack of understanding and agreement in contract procurement
- Award of contract to incompetent contractors.

This meant that the complex, relational and lengthy process of designing and building makes construction a process in which disputes are virtually ensured as also noted by McManamy (1994).

From the client's point of view, major causes of disputes include:

- Inadequate planning: Insufficient planning on the side of the contractor and the consultant towards the smooth completion of the project brings about misunderstanding. One of them stated:

*"I have confrontations with the contractor when he does not plan for the building materials to be delivered on time."*

- Absence of team spirit
- Poor site management
- Delay in the payment of consultant's pay
- Delay in the payment of the contractor.

Williamson (1979) identified three large root causes of conflicts that are behavioral problems, contractual problems and technical problems due to uncertainty

and low experience. In this regard, the study further explored the major cause of disputes in the industry. This variable was treated as a multiple response variable.

**Table 4.11: Major cause of disputes in the industry**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Behavioral problems	59	41.5
Contractual problems	56	39.4
Technical problems	29	20.4

Source: Field Work, 2014

The most prevalent cause of conflicts as noted in Table 4.11 is behavioural problems (41.5%) followed by contractual problems (39.4%). Technical problems were noted to be the least cause of disputes in the industry. Generally, it can be concluded that the major cause of dispute in the building and construction industry is due to human interaction, personality and culture clashes as well as definition, interpretation and clarification of the contract. Behavioural problems being the major cause of conflict as outlined by the respondents confirm the second category of causes of conflicts (Causes that arise from the environment or state of affairs created by members in the project team) as identified by Ntiyakunze (2011).

Although the results in Table 4.11 supports that of Williamson (1979) that the three large root causes of conflicts include behavioural problems, contractual problems and technical problems due to uncertainty and low experience, it can be deduced that conflict occurrence due to uncertainty is minimal in the industry.

Potential causes of disputes in the construction industry were ranked by the respondents. The relative importance of the 10 variables were performed using the relative importance index.

$$\text{Relative importance index (RII)} = \frac{\sum w}{AN}$$

Where,  $w$  is the weighting given to each factor by the respondents, ranging from 1 to 10,  $A$  is the highest weight (i.e. 10 in the study) and  $N$  is the total number of respondents.

**Table 4.12: Potential causes of disputes in construction projects**

Response	Weights									
	1	2	3	4	5	6	7	8	9	10
Project outsourcing by third party	12	5	12	12	11	9	11	8	12	51
Defects in the contract document	5	8	12	11	12	16	14	25	23	17
Unforeseen works	5	4	9	14	8	25	25	18	26	9
Work completion time limits	4	4	5	5	7	9	10	22	29	48
Excess works/work shortfall	4	4	9	11	19	19	19	15	27	16
Failure to cost work undertaking	3	8	13	8	15	14	19	20	19	24
The scope and quality of work	3	7	9	7	18	11	22	26	26	14
Delays/ suspension of projects	2	15	5	6	15	8	10	11	24	47
Cost of work	2	5	3	7	14	6	21	27	29	29
Contract non- execution	1	3	2	5	6	9	18	26	38	35

Source: Fieldwork, 2014

Table 4.13 shows the calculation of the relative importance index from Table 4.12

**Table 4.13: Relative importance index and ranking of the factors in Table 4. 12**

Response	Relative Importance Index (RII)	Rank
Project outsourcing by third party	0.681	5



Defects in the contract document	0.652	8
Unforeseen works	0.650	10
Work completion time limits	0.785	2
Excess works/work shortfall	0.663	9
Failure to cost work undertaking	0.666	7
The scope and quality of work	0.674	6
Delays/ suspension of projects	0.689	4
Cost of work	0.748	3
Contract non-execution	0.800	1

Source: Fieldwork, 2014

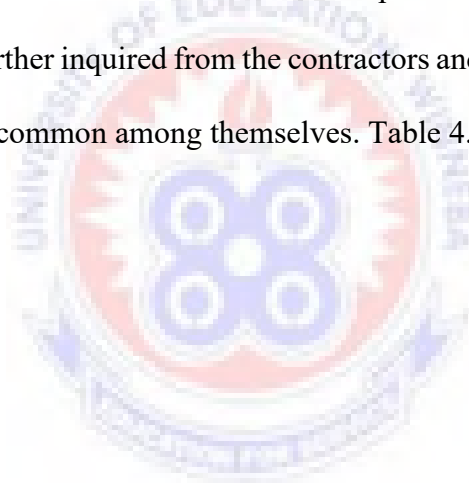
The results in Table 4.13 show that losses due to contract non-execution were ranked as the most important cause of disputes in the construction industry. The other next four most important causes of disputes as indicated in Table 4.13 includes delays i.e. work completion time limits (rank 2), cost of work (rank3), suspension of construction projects (rank 4) and damage caused by the project outsourcing by third parties.

Contract non execution being ranked as the first important cause of conflict meant that inexcusable delay is the most important cause of delays in construction disputes. Contract non-execution being ranked as the most important cause of dispute in the industry supports that of Bramble and Callahan (1987) that delays occur in almost every construction project. It also gives the indication that many construction projects suffer from delay. Work completion time limits also being ranked as the second most

important cause of conflict in the industry supports the findings of Matijevic (2008) that if the completion time has passed and the works have not been completed, serious problems arise for the investor and the contractor.

The ranking of the factors as shown in Table 4.13 supports that of Matijevic (2008) assertion that parties to construction activities (consultant, client and contractor) can find themselves in a number of disputed situations regarding various circumstances: work completion time limits (delays), losses due to contract non-execution, or damage caused by the project outsourcing by third parties. On the other hand, unforeseen work was ranked as the 10<sup>th</sup> factor that causes dispute followed by excess works and works shortfalls which was ranked as the 9<sup>th</sup> cause of disputes out of the 10 variables.

The study further inquired from the contractors and clients to indicate the causes of conflicts that are common among themselves. Table 4.14 presents the results:



**Table 4.14: Major cause of conflicts among clients and contractors in the industry**

Response	Frequency	Percent
Failure to respond in timely manner	32	43.8
Poor communication among members of the team	25	34.2
Inadequate tracing mechanisms for request of information	31	42.5
Supervision and coordination efforts on the part of the project	22	30.1

Lowest price mentality in engagement of contractors and designers	24	32.9
Reluctance to check for constructability, clarity and completeness	22	30.1
Failure to appoint a project manager	21	28.8
Delays in approving shop drawings/sample materials from the consultant	21	28.8
Delays in progress payment	40	54.8

Source: Field Work, 2014

The results in Table 4.14 were treated as multiple response variables since a respondent could choose more than one option. The three most important causes of conflicts among contractors and clients included delays in progress payment, failure to respond in timely manner and inadequate tracing mechanisms for request of information. On the other hand, failure to appoint a project manager as well as delays in approving shop drawings and sample materials from the consultant were noted as the least causes of disputes among the respondents.

The results in Table 4.14 supports that of Martin (1976) that delays give rise to disruption of work and loss of productivity, late completion of project, increased time and costs of construction projects, and third party claims and abandonment or termination of contracts.

The study also explored the major causes of conflicts among contractors and consultants with the results shown in Table 4.15.

**Table 4.15: Major causes of conflicts among contractors and consultants in the industry**

Response	Frequency	Percentage
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Difficulties in financing project by contractor	41	41.0
Poor site management and supervision by contractor	30	30.0
Poor communication and coordination by contractor with other parties	46	46.0
Ineffective planning and scheduling of project by contractor	33	33.0
Improper construction methods implemented by contractor	34	34.0
Poor qualification of the contractor's technical staff	28	28.0
Delays in site mobilization	29	29.0

Source: Field work, 2014

The two prevalent causes of conflicts among the contractors and the consultants included poor communication and coordination by contractor with other parties and difficulties in financing project by contractor. On the other hand, poor qualification of the contractor's technical staff and delays in site mobilization seemed to be the least causes of conflicts between contractors and consultants.

The study also explored the causes of conflicts among clients and consultants.

Table 4.16 presents the results.

**Table 4.16: Major cause of conflicts among clients and consultants in the industry**

Response	Frequency	Percentage
Delays in performing inspection and testing by consultants	51	45.1
Delays in approving major changes in the scope of work by consultants	46	40.7
Inflexibility (rigidity) of consultant	38	33.8
Poor communication/coordination between consultants and other parties	46	40.7

Late in reviewing and approving design documents by consultants	37	32.7
Inadequate experience of consultant	43	38.1

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Source: Fieldwork, 2014

. The most prevalent causes of conflicts among the clients and the consultants in the industry included delays in performing inspection and testing by consultants, delays in approving major changes in the scope of work by consultants. On the other hand, lateness in reviewing and approving design documents by consultant as well as inadequate experience of consultants were noted as the least causes of conflicts among clients and consultants. The results in Table 4.16 meant that delays caused by the client and the consultant include late submission of drawings and specifications, frequent change orders, and incorrect/inadequate site as noted by Ahmed and Azhar (2013).

#### **4.5 The Effects of Disputes on the Main Participants (Client, Contractor and Consultant) on the Construction Industry as a Whole**

This section of the Chapter analyses the implications of disputes among the major actors in the construction industry as well as the implications of the disputes on the construction industry. To this end, contractors, consultants and clients outlined ways in which construction disputes affect the execution of projects.

The study examined in which ways construction dispute affect project execution and efficiency.

**Table 4.17: Effect of disputes on project execution and efficiency**

Response	Frequency	Percentage
Delays	65	45.2

Undermined team spirit	27	9.0
Increased project cost	34	23.8
Damage continuing business relationship	17	12.0
<b>Total</b>	<b>143</b>	<b>100.0</b>

Source: Fieldwork, 2014

Generally, it is noted in Table 4.17 that the most common way in which disputes affect project execution and efficiency in the construction industry is that disputes result in the delay of construction projects. This was attested by 45.2% of the respondents. On the other hand, damage to continuing business relationships was noted to be the least way in which disputes affect project execution and efficiency in the construction industry (12.0%). The results in Table 4.17 is consistent with that of Ahmed and Azhar (n.d) who asserted that delay is generally acknowledged as the most common, costly, complex and risky problem encountered in construction projects. This could be explained by the overriding importance of time for both the owner (in terms of performance) and the contractor (in terms of money). The results in Table 4.17 also meant that disputes often result in drawbacks and disharmonizations in the completion of the construction projects with considerable cost as noted by Ayudhya (2011).

Specific ways in which construction disputes affect the execution of projects according to the clients include:

- Suspension of work
- Increase in the cost of executing the project
- Delay in the completion of the project
- Extension of the duration of the project
- Waste of resources

- Time overrun.

The points as outlined by the clients are consistent with Busch (1994) that dispute in the construction industry result in lower productivity, further delays, strained relationships and unnecessary costs.

Major effects of construction disputes on the clients include:

- Delay of the project. Late completion of project leading to increase of project cost. One of the clients said:

*Disputes delay the project hence there is the likelihood of increase in cost of project.*

- Increase in the cost of financing a project: When disputes occur, additional project cost is incurred. In this regard, one of the clients stated:

*Extra cost is incurred on the project as a result of the increases in the price of project materials.*

- Loss of profit: Losses occur as a result of extension of project time as well as inflation in building materials.
- Mistrust for the other parties: There is loss of trust in the client, contractor or the consultant. This even extends to loss of interest in the project.

The points as outlined by the clients are consistent with Pinnel (1994) that the client's projects will no longer meet the original goal and expectations, suffer from payments of high fees and also experience a delayed completion when it becomes involved in protracted disputes.

Specific ways in which construction disputes affect the execution of projects according to the consultants include:

- Abandonment of project
- Cost overrun

- Increase in project cost
- Extension of project time
- Delays in the execution of the project
- Waste of resources
- Total abandonment of project
- Termination of contract
- Loss of profit and
- Cost of forming resolution team.

The points as outlined by the consultants are consistent with Cheung and Suen (2002) assertion that if disputes are not properly managed, they may cause project delays and increase project costs. The results also support Ng et al (2007) that conflict resolution in the construction industry is often characterized by the high cost of conflict resolution.

Specific ways in which construction disputes affect the execution of projects according to the contractor include:

- Extra cost: Extra cost is incurred on labour, plant and equipment. There is also the extra cost of recruiting labour: One of the contractors stated:

*“Sometimes, we have to hire new people to take over the project when misunderstandings occur hence we incur huge cost.”*

- Extension of project completion time
- Abandonment of project: An ongoing project is totally abandoned when conflicts arise
- Loss of profit: The profit is reduced if not totally lost. One of the contractors said:

*Profits from the project is drastically reduced or even lost completely*



The points as outlined by the contractors are also consistent with Pinnel (1994) that as a result of conflicts/disputes, consultants will not be able to achieve the profit maximization objective and they will suffer financial loss from unpaid work and claims and ultimately payment of legal fees.

A review of the points as outlined by the consultants, the contractors and the clients indicated that the major effect of disputes in the construction industry included delays in the execution of the project, cost overrun, extension of project time. Cost overrun being one of the major ways in which construction disputes affect the industry is consistent with Harris (2012) in his assertion that construction projects have become embroiled in disputes that ultimately cost the industry millions of dollars each year.

#### **4.6 Conflict resolution in construction dispute**

There is a general worldwide acceptance according to Collins and London (2007) that the severity of dispute is higher in the construction industry than in other major sectors. There is also widespread recognition that because of the high incidence of disputes, the industry is an accepted leader in the development of dispute resolution systems and processes. This section analysed measures for resolving conflicts that come up in the construction industry. In this regard, respondents were made to subscribe to the opportunities to attend conflict management capacity building programmes for actors in the construction industry. Table 4.18 presents the results:

**Table 4.18: Opportunities to attend conflict management programmes**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Never before	23	16.2
Hardly ever	39	26.8

Often	41	28.9
Always	40	28.2
<b>Total</b>	<b>143</b>	<b>100.0</b>

Source: Fieldwork, 2014

An assessment of the results in Table 4.18 shows that less than 30% of the respondents (28.2%) had rated the opportunities to attend conflict management programmes as 'always'. A critical assessment of the results shows that generally, the opportunities for the respondents to participate in conflict management programmes had not been very frequent. Thus the opportunities for capacity building for members has not been frequent to help prepare such members adequately in arbitrations and mediation issues. There is the need to create training opportunities for the actors in conflict management as noted by Owens (2001). According to Owens (2001), training of individuals and groups in conflict resolution are essential elements for effective conflict resolution.

The study also explored the opportunities created across contractors and consultants.

**Table 4.19: Opportunities to attend conflict management programmes across contractors and consultants**

Response	Contractor		Consultant	
	f	%	f	%
Never before	10	23.3	9	30.0
Hardly ever	23	53.5	5	16.7

Often	7	16.3	9	30.0
Always	3	7.0	7	23.3
<b>Total</b>	<b>43</b>	<b>100.0</b>	<b>30</b>	<b>100.0</b>

Source: Fieldwork, 2014

Of the 43 contractors who participated in the study, more than half (52.4%) had rated the opportunities to attend conflict management capacity building programmes as ‘hardly ever’ while less than 10% (7.1%) rated the opportunity as ‘always’. On the other hand, 24.1% of the consultants rated the opportunities in this regard as ‘always’ while 27.6% also rated the opportunity as ‘often’. Further analysis shows that there was a statistically significant difference in the opportunities for both the contractors and the consultants to benefit from opportunities for conflict management programmes ( $\chi^2 = 10.926$ ,  $df = 3$  and  $p = 0.012$ ). Generally, it is seen that the consultants have had much opportunities to benefit from conflict management programmes as compared to the contractors.

Measures for resolving conflicts in the construction industry was also examined with the results shown in Table 4.20.

**Table 4.20: Best measures for resolving conflict in the construction industry**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Litigation	11	7.8
Mediation and conciliation	34	23.5
Arbitration	30	21.3

Adjudication	22	15.5
Negotiation	46	32.0
<b>Total</b>	<b>143</b>	<b>100.0</b>

Source: Fieldwork, 2014

Negotiation was noted as the best measure for resolving conflicts in the construction industry followed by mediation and conciliation. On the other hand, litigation was noted to be an uncommon measure in resolving conflicts. The result in Table 4.20 is consistent with Finlay (1998) who states that direct negotiation is the original, most cost effective and most reliable form of dispute resolution. This is because, the process of negotiation requires the willingness of both parties to understand the others standpoint and readiness to resolve disputes. Litigation being the least form of conflict resolution for conflict resolution could be explained by Cox (2011) observation that most parties in conflict situation are not in favour of settling the conflicts in the court. Additionally, relating the findings in Table 4.20 to that in Table 4.17 meant that construction disputes are costly and disruptive as noted by Matijevic (2008) but does not support Matijevic (2008) assertion that construction dispute too frequently lead to litigation.

Following the results in Table 4.20, the study further explored the conflict resolution mechanisms which have been used to resolve disputes among the respondents. This variable was treated as a multiple response variable since a respondent could choose more than one measure of resolving conflict.

**Table 4.21: Measures used to resolve disputes in the construction industry**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
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Litigation	22	20.0
Mediation and Conciliation	42	38.5
Arbitration	41	37.6
Adjudication	20	18.3
Negotiation	56	51.4

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Source: Fieldwork, 2014

It is seen in Table 4.21 that the commonest conflict resolution mechanism used among the respondents was negotiation (51.4%) followed by mediation and conciliation (38.5%). This meant that there are dispute resolution options available to the parties to construction contract as indicated by Cox (2011). This result meant that conciliation and mediation are usually employed once the dispute has passed through the administrative procedures and negotiations have proved unsuccessful as noted by Collins and London (2007). Also is the fact that adjudication has not been a common means of resolving conflicts in the construction industry. This is a confirmation of Cox (2011) assertion that adjudication is being utilised recently as a contractual form of dispute resolution. The results in Table 4.21 also meant that the construction industry relies on formal conflict resolution processes such as mediation as noted by Thomas (2002) but is somehow inconsistent with Thomas (2002) assertion that the construction industry relies largely on litigation.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents a summary of the findings from the study as well as the conclusions, recommendations and suggestions for future research.

#### **5.2 Summary of Findings**

The study investigated construction disputes and its implications for project efficiency and execution. In all, 143 respondents participated in the study which included 43 contractors, 30 consultants and 70 clients. Stratified random sampling technique was used in the sampling of the respondents. Data analysis was performed using the Statistical Package for Social Sciences (SPSS), version 17 and Microsoft Excel.

The first objective of the study identified frequently occurring causes of disputes in the construction industry from the client, contractor and consultants' perspective.

The following key findings emerged from the study:

- i. Majority of the respondents were of the view that conflicts are inevitable in the construction industry.
- ii. Majority of the respondents have had conflicts with actors in the construction industry.
- iii. There was a statistically significant difference in the occurrence of conflicts across the periods for which the respondents have been in the industry. However, the occurrence of conflicts is statistically independent of the sizes of the projects the respondents have handled.
- iv. The most prevalent conflict among the actors in the building and construction industry were that between clients and contractors and between clients and consultants
- v. The most prevalent cause of conflicts among the actors was behavioural problems followed by contractual problems. Technical problems were noted to be the least cause of disputes in the industry.
- vi. The first five important causes of disputes in the industry as indicated by the respondents included losses due to contract non-execution, work completion time limits, cost of work, suspension of construction projects and damages caused by project outsourcing by third parties.
- vii. The three most important causes of conflicts among contractors and clients included delays in progress payment, failure to respond in timely manner and inadequate tracing mechanisms for request of information.

- viii. The most prevalent causes of conflicts among the clients and the consultants in the industry included delays in performing inspection and testing by consultants as well as delays in approving major changes in the scope of work by consultants.
- ix. The two prevalent causes of conflicts among the contractors and the consultants included poor communication and coordination by contractor with other parties and difficulties in financing projects by contractors.

The effects of disputes on the main participants (client, contractor and consultant) to the construction industry as a whole was studied in the third objective with the following major findings:

- i. The most common way in which disputes affect project execution and efficiency in the construction industry is that disputes result in delay of construction projects.
- ii. From the clients perspective, specific ways in which construction disputes affect the execution of projects in the industry included the suspension of work which increase the cost of executing the project, delays in the completion of the project, extension of the duration of the project, waste of resources and time overrun.
- iii. From the perspective of the consultants, specific ways in which construction disputes affect the execution of projects included the abandonment of projects, cost overruns, increases in project cost and the extension of project time.
- iv. From the perspective of the contractor, specific ways in which construction disputes affect the execution of projects included the



incurring of extra cost, extension of projects completion time, abandonment of project and the loss of profit.

The final objective of the study explored the appropriate preventive measures to be developed to prevent the occurrences of construction disputes in Ghana. The key findings included:

- i. The commonest conflict resolution mechanisms used among the respondents was negotiation, mediation and conciliation.
- ii. However, litigation and adjudication were the least employed methods of resolving conflicts in the construction industry.
- iii. Negotiation was noted as the best measure for resolving conflict in the construction industry followed by mediation and conciliation.
- iv. Generally, the opportunities for the contractors and consultants to participate in conflict management programmes have not been very frequent.
- v. There was a statistically significant difference in the opportunities for both contractors and consultants to benefit from opportunities for conflict management programmes.

### **5.3 Conclusions**

Generally, the occurrence of conflicts in the building and construction industry is a prevalent situation in the industry and that the most prevalent conflict among the actors in the industry were that between clients and contractors and between clients and consultants.

In relation to major causes of conflicts, behavioural problems including human interaction, personality and culture clashes were the major causes of conflict in the

industry. Thus effective communication is essential in the analysis of conflicts in the industry as well as identifying their root causes. The study further concluded that the first five important causes of dispute in the industry included losses due to contract non-execution, work completion time limits, cost of work, suspension of construction projects and damages caused by project outsourcing by third parties.

In relation to the effects of disputes on the main participants (client, contractor and consultant) and to the construction industry as a whole, the major effects of disputes in the construction industry included delays in the execution of the projects including suspensions, cost overrun and the extension of project time.

Conflicts may be destructive or constructive depending on how they are resolved. It is inferred from the study that different conflict resolution mechanisms and techniques are used in resolving conflicts in the construction industry, and that clients, contractors and consultants applied different conflict management styles in managing conflict. The major types of conflict management styles used by the actors in the construction industry were negotiation, mediation and conciliation. Litigation and adjudication are uncommon methods of resolving conflicts in the construction industry.

#### **5.4 Recommendations**

Based on the major findings and conclusions from the study, the following recommendations are made for stakeholders:

- i. Supervision of sub-contractors such as suppliers is needed to prevent delays of construction projects from the perspective of the contractor. This study recommends that effective monitoring and supervision mechanisms should

be instituted by contractors as part of their project management to check the effective delivery of project site materials by suppliers.

- ii. The Ghana Association of Building Contractors and Consultants are encouraged to organize capacity building programmes on conflict management especially for building contractors. This is essential in empowering contractors and consultants in identifying destructive conflicts as well as helping in responding to conflicts in a more constructive manner.
- iii. Specifications of what will constitute an acceptable finished product: Actors are also encouraged to include construction contractual agreement with clauses requiring parties to give prompt and comprehensive notices of events that may impact the schedule or cost of the project, or risk waiver of their claim rights.
- iv. Enhancement of the processes in performing inspection and testing by consultants.
- v. Early submission of drawings and specifications: Construction consultants are advised to submit their drawings and specifications early enough to the contractor for the timely execution of the project.
- vi. Enhancing meaningful interaction and communication among actors: Communicating ones feelings and needs clearly is an important aspect of conflict resolution. Clients, contractors and consultants engaged in any construction project should employ an open communication mechanism in the execution of the project
- vii. A future study to examine the factors that hinder effective conflict resolution in the building construction industry is recommended to improve the delivery of projects.

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**KUMASI CAMPUS**

**FACULTY OF TECHNICAL EDUCATION**

**DEPARTMENT OF CONSTRUCTION AND WOOD TECHNOLOGY**

**EDUCATION**

**SURVEY QUESTIONNAIRE FOR CLIENTS, CONSULTANTES AND  
CONTRACTORS**

**Research topic: A STUDY INTO CONSTRUCTION DISPUTES AND ITS  
IMPLICATIONS FOR PROJECT EFFICIENCY AND  
EXECUTION**

**Dear Respondent**

This questionnaire has been designed purely for academic purposes. It has been designed to examine construction disputes and its implications for project efficiency and execution with specific focus on the frequently occurring causes of disputes in the

construction industry from the client, contractor and consultants' perspective and the effects of disputes on the main participants (client, contractor and consultant) as well as the construction industry as a whole.

You have been selected as one of the most trusted stakeholders to respond to the issues to your best of ability. You are, however, assured that information provided to complete this questionnaire will be treated with the strictest confidentiality.

Thank you in advance for your participation.

**INSTRUCTION: Please supply answers and tick where appropriate**

**SECTION A: SOCIO-ECONOMIC BACKGROUND**

- 1) Gender.....Male  Female
- 2) Age.....
- 3). Educational background...a) First Degree  b) Second degree  c) HND
- d) Secondary  e) Specify if others.....

**SECTION B: PROFILE OF BUSINESS (ONLY CONTRACTORS AND CONSULTANTS)**

4. Kindly indicate the role you play in the building and construction industry  
.....  
.....
5. For how long have you been engaged in the building and construction industry?  
.....
6. How many projects have you been involved in?  
.....
7. What was your role in each project you have been involved in?

.....  
.....

8. How would you describe the size of the projects which you have handled?

- a. Small
- b. Medium
- c. Large

**SECTION C: FREQUENTLY OCCURRING CAUSES OF DISPUTES IN THE CONSTRUCTION INDUSTRY FROM THE CLIENT, CONTRACTOR AND CONSULTANTS' PERSPECTIVE**

9. How would you describe the frequency at which conflicts occur in the construction industry between the major actors?

- a. Always
- b Sometimes
- c. Never before

10. Have you had any conflicts with any of the actors in the industry a. Yes  b. No

11. What was the major cause of the dispute? if any

.....  
.....  
.....

12. Which of these disputes are the most rampant in the industry? You may tick more than one

- a. Client to Contractor
- b. Contractor to Consultant
-



Damage caused by the project outsourcing by third parties.														
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

16. Which of these causes of conflicts are common among the clients? You may tick more than one (Contractor and Consultants only)

- a. Failure to respond in timely manner
- b. Poor communications amongst members of the team,
- c. Inadequate tracing mechanisms for request of information
- d. Supervision and coordination efforts on the part of the project
- e. Lowest price mentality in engagement of contractors and designers
- f. Reluctance to check for constructability, clarity and completeness
- g. Failure to appoint a project manager
- h. Delays in approving shop drawings and sample materials from the Consultant
- i. Delay in progress payments

17. Which of these causes of conflicts are common among contractors? You may tick more than one (Clients and Consultants only)

- i. Difficulties in financing project by contractor
- ii. Poor site management and supervision by contractor
- iii. Poor communication and coordination by contractor with other parties
- iv. Ineffective planning and scheduling of project by contractor
- v. Improper construction methods implemented by contractor
- vi. Poor qualification of the contractor's technical staff
- vii. Delays in site mobilization

18. Which of these causes of conflicts are common among consultants? You may tick more than one (Clients and contractor)

- i. Delays in performing inspection and testing by consultant
- ii. Delays in approving major changes in the scope of work by consultant
- iii. Inflexibility (rigidity) of consultant
- iv. Poor communication/coordination between consultant and other parties
- v. Late in reviewing and approving design documents by consultant
- vi. Inadequate experience of consultant

**SECTION D: THE EFFECTS OF DISPUTES ON THE MAIN PARTICIPANTS  
(CLIENT, CONTRACTOR AND CONSULTANT) AND TO THE  
CONSTRUCTION INDUSTRY AS A WHOLE**

19. In what specific ways do construction disputes affect the execution of projects?

.....  
.....  
.....

20. What are the major effects of construction disputes on:

i. Clients (Client Only)

.....  
.....  
.....

Contractor (Contractor Only)

.....  
.....



.....  
Consultant (Consultant Only)  
.....  
.....  
.....

21. In which way does construction dispute affect project execution and efficiency?

- a. Delays
- b. Undermined team spirit
- c. Increased project costs
- d. Damage continuing business relationships

**SECTION E: CONFLICT RESOLUTION IN CONSTRUCTION DISPUTE**

22. How would you subscribe to opportunities to attend conflict management capacity building programmes for actors in the construction industry?

- a. Never before
- b. Hardly ever
- c. Often
- d. Always

23. Which of these measures is the best for resolving conflicts in the contribution industry?

- a. Litigation
- b. Mediation and Conciliation
- c. Arbitration
- e. Adjudication
- f. Negotiation

24. Which of these measures have you ever used to resolve dispute in the construction industry? (You may tick more than one)

- a. Litigation
- b. Mediation and Conciliation
- c. Arbitration
- d. Adjudication
- e. Negotiation



**SECTION F: RECOMMENDATIONS AND SUGGESTIONS**

25. Kindly indicate what measures could be employed to effectively and efficiently manage disputes in the construction industry

.....

.....

.....

**THANK YOU FOR YOUR TIME AND COOPERATION**

