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GHANA**

Topic

**Effect of Stakeholder Interference on Performance of Contractors in Construction
Project Delivery.**

By

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MASTER OF SCIENCE

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DECLARATION

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

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ABSTRACT

Stakeholder interference has been an issue in the construction industry in various facets of the construction, however, the construction industry in the developing countries has its fair share as well as the developed countries'. Based on this, this study was conducted to examine the effect of stakeholder interference on performance of contractors in project delivery in the Ghanaian construction industry. To help in the realization of this aim were three (3) objectives put forward as: to determine the stakeholder interference factors on performance of contractors during project delivery, to determine the effect of stakeholder interference on the performance of contractors during project delivery, and to explore measures that control the effect of stakeholder interference on performance of contractors during project delivery. The study was positioned in the positivist paradigm which enabled the researcher to make an objective analysis by using the quantitative research strategy which involved a questionnaire survey. Due to its large population size of professionals and construction firms of the list of Association of building and Civil Engineering Contractors of Ghana in the Accra Metropolis form the population which numbers over one hundred, a target population of seventy-five (75) was adopted for this study. A sample size of 43 was chosen for this study by using the Yamane (1967) formula for calculating the sample size, using a precision (e) of 10%. Out of that two questionnaire was distributed each to respondent, a sum total of eighty-six (86) questionnaires were administered and seventy-five (75) responses were retrieved from contractors (D1K1, D2K2), Designers/Architect, Engineers, statutory bodies all from registered and operational D1K1 and D2K2 building road construction firms in the Accra Metropolitan Area indicating a high response rate of 87.21% which is more than 50% which is appropriate for the analysis. The analysis of the data gathered was done using descriptive statistics (frequencies, percentages), mean score ranking, relative importance index (RII) and Chi-square test. Findings from the analysis depicted that most of the respondents in the building and road construction industry thus D1K1 and D2K2 firms were aware of stakeholder interference and its associated issues. Revealed from the study was six effect that impact the delivery of project, among them was time overrun being the major Principal impact identified. It was recommended that all drawings and designs must be accepted and any correction or update done before the contractor take possession of site and also there should be free flow information which was identified for the control measure. It is therefore recommended that adequate construction budget, timely issuing of information, finalization of design and project management skills should be the main focus of the parties in project procurement process. If these are held to and practiced in the Ghanaian construction industry project delivery will be improved tremendously.

KEYWORDS: EFFECT, INTERFERENCE, STAKEHOLDER, PERFORMANCE

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DEDICATION

This dissertation is dedicated in memory of my late father Mr. Benjamin Teye

Nomo, to God Almighty, and to my entire family

CHAPTER 1

INTRODUCTION

1.1 Background of the study.

The construction sector of every country affect the development of its economy which provides jobs, fixed asset as alluded to by (Ofori, 2012). Economy as a whole, the life of its citizen are improved due to the infrastructure development and also improve the economy. The country spends more than 75% of its budget are sent on capital projects which makes them exception as it contributes to the nation's economy . Gross Domestic product (GDP) in all nations contribute between 5 and 10% of the population and all gross settled capital arrangement (Lopes, 2012) The construction industry is an economic investment and many studies have stressed on how the construction industry has contributed to national economic development (Myers, Sergi and Shelat, 2013). In addition, the physical framework, worked through construction projects forms the country's monetary spine as it shapes the veins for the help of profitable action, by empowering merchandise and enterprises to be distributed inside and outside the nation (Ofori, 2012) .

Various sectors and industry offer the economy with diverse stakeholder with wide ranges to addressed and managed. There are several key players to the construction industry due to its complex and huge industry. The success of every construction project depends on theses stakeholder and such their ways that defines the success of project needs to understood and take prospectively. Success in construction project has been regarded as achieving project objectives which traditionally have been provision on time, on budget of a required performance or achievement (Darda *et al.*, 2014) .individual, group or organization who may affect, be affected by or perceive to be affected by a decision, activity or outcome of a project are refer to

stakeholders. (Bryde, Broquetas and Volm, 2014) Project management institute (2013).stakeholder in construction projects play important role which need much emphasis. Lack of attention to stakeholders has contributed to higher rate of failure in construction project. According to (Olander and Landin, 2005) the negative attitude of stakeholders to a construction project can lead to increase in cost of production and sometimes delays because of the difficulty in implementation of project design. A project may not be considered successful if the project stakeholder are not satisfied. The role of contractors in construction projects places great emphasis on the ability to plan and execute projects to meet time lines (Workers, 2000) Based on these aspects of the project the contractor work hand-in-hand with the stakeholders for a well-executed work, and the effect the construction industry has issues with stakeholder inference on contractors performance, design issues and other factors which influences performance.

stakeholder in the building and road industry must have good performance of contractors and similar need of understanding to the needs and requirement of the end user as stated by (Sun, Hu and Chang, 2016) (Turner, Lille and France, no date) have similar understanding of needs and requirement of end user.construction projects are more and more becoming complex and involving and many stakeholder of different background and professional expertise in the construction industry. With this background, the study examines effects of stakeholder interference on contractors' performance on project delivery in the Ghanaian construction industry.

1.2 PROBLEM STATEMENT

Construction industry made up of building and road boosts the nation's economy and successively gives way to societal progression; the industry is characterized by substandard practices (Nelson and Asamoah, 2014) thereby leading to project failure. Interference has always been a challenge to the construction industry, which is principally a project-based industry (Robinson *et al.*, 2005). The typical construction organization hardly encourages the culture interference (Carrillo and Heavey, 2000). (Britz *et al.*, 2006) undertook a reality check as to whether Africa is being affected by effect of interference from stakeholder on contractors' performance. They analyzed the effect of stakeholder interference. The main findings of their research indicated that Africa has still a long way to go in terms of interference on contractors. The World Bank, acknowledges the potential impact of stakeholder interference in project delivery. In particular, Ghana to promote attentiveness among policymakers, civil society and private sector on the awareness and consequences of stakeholder interference, while developing coherent strategies to reduce or eliminate the impact of stakeholder interference. It was also suggested that Ghana must assess where it stood in terms of progress towards becoming a knowledge society and learn from other well standing countries. According to (Tutu, Bergakademie and Twumasi-ampofo, 2017) the typical Ghanaian building and road industry suffers from a lack of planning, including inappropriate use and allocation of building materials, inconsistencies and omissions in design, failure to meet the needs of the stakeholder, and disjointed communication between stakeholder and contractor cooperation in the industry. The construction industry is loaded with people who are apt in their trades and full of experts who have a long time of involvement in doing undisputable undertakings (Carrillo and Heavey, 2000). According to (Siemieniuch and Sinclair, 2004), stakeholder interference cause within the

project, are usually not captured and shared. This knowledge is usually buried in reports which are hardly read and a filing system that is understood by just a few in the organization. Along the line, this knowledge is lost when people leave the organization resulting in wasted activity and a defective project performance (Siemieniuch and Sinclair, 2004)

Every organization needs to put resources into making and actualizing the best practices are adopted to prevent stakeholder interference, forms, techniques, instruments and advances (Rubenstein-montano *et al.*, 2001). According to (Siemieniuch and Sinclair, 2004) and (Egbu, 1999) it is presently being perceived that project performance depends on the contractor (particularly inside the building industry where projects are typically briefly executed), needs a lot of improvement, both inside construction organizations, and between firms. Stakeholder interference on performance of contractors seeks to find the effect in the Ghanaian construction industry. It is also intended to further discuss within government circles and academia towards improving or remedy the effects of the interference in the construction industry in Ghana.

1.3 AIM

To examine the effect of stakeholder interference on performance of contractors in project delivery.

OBJECTIVES

The specific objectives of this study were:

1. To determine the stakeholder interference factors on performance of contractors during project delivery
2. To determine the effect of stakeholder interference on the performance of contractors during project delivery

3. To explore measures that control the effect of stakeholder interference on the performance of contractors during project delivery.

1.4 RESEARCH METHODOLOGY

For the aim of this study to be achieved, it is important to make usage of appropriate research approaches to enable the researcher achieve the desired aim. In undertaking this study, both quantitative and qualitative research approach was used that is mixed method of data collection was used. Quantitative research involves engaging respondents by giving them a set of structured questions with likely responses. It is a means by which investigations are made so as to test theories with variables, and analyse collected data in the form of numbers with statistical methods.

Both primary and secondary sources of data were made use of in this study. The data collection tool used to ask primary data for the study was questionnaires. The questionnaires used for data collection entailed predominantly "close-ended" questions and were given to knowledgeable and experienced persons as far as construction industry concerned. These people broadly included engineers, construction firms, contractors (D1KI, D2K2), Engineers, etc. Secondary data sources was from existing literature journals, publications of corporate bodies, books, newspapers, online sources senior dissertation, etc. Review of literature discloses research issues into understanding issues theory related to knowledge research topic. Therefore, a complete literature review regarding the effect of stakeholder interference on contractors' performance in project delivery in the Ghanaian construction industry is carried out. The research topic must be related to the information being revised and considered competently.

The collected questionnaires been gathered and analyzed using the descriptive analysis, relative importance index, mean score index and Chi-square for data analysis. Details regarding the collected data would be analyzed into charts both pie and bar.

1.5 SCOPE OF STUDY

The scope of this study background narrowed to the building and road construction industry in Ghana and in particular to registered building and road construction firms in the Greater Accra Region. Accra metropolis will geographically cover the study. The choice of location was due to larger population of professionals found in the region. Due to proximity to data from the professionals this region was also chosen and retrieving the information easier. Questionnaires were disseminated to respondents with the skills and knowledge about the research topic.

1.6 SIGNIFICANCE OF STUDY

The study seek to examine effect of stakeholder interference on performance of contractors in project delivery in the Ghanaian construction industry. The construction industry have major influence in the country's economy due to its products and usage such as roads, buildings for production of goods and services.

The results of the study will be beneficial to the following:

- This study will make contractors aware of the consequences of interference on project delivery.
- The results of this research will give contractors channels of addressing stakeholder interference issues.

- The study will increase their competency of project delivery on time.
- The research material will serve as reference for other researchers to carry out similar study.
- It will also contribute to the development efforts in the construction industry and the society at large as well as contributing to the knowledge bank in the critical area of performance

1.7 POTENTIAL CONTRIBUTION TO KNOWLEDGE

The study, effect of stakeholder interference on contractors' performance in project delivery in Ghanaian construction industry is supposed to bridge the gap in researches previously conducted in this area in addition to contributing to a broader understanding and reception of the stakeholder interference especially in Ghanaian construction sector. This study will assist Ghanaian contractors especially in the construction industry by providing helpful information and creating awareness on the effect of stakeholder interference.

To survive and succeed in this complex and diverse construction economy, the Ghanaian Construction industry needs to become far more effective and more productive. With stakeholder interference, even when contractors are faced with issues in the contractual arrangement, there will still be avenues to appropriately address those issues which will not affect the deadline of the project delivery which will results in delays. A construction firm with well knowledgeable staff members and a good knowledge about how to address or channel their issues of interference would increase the firm's competitiveness with other companies. Juniors in the absence of the construction manager or supervisor would be able to handle challenges which may arise during work sessions. Management would be able to exploit ways of channeling their issues.

The research also determine numerous stakeholder interference factors associated with the construction processes in the Ghanaian construction industry and as a result comes out with pragmatic recommendations/strategies which can be applied to meet deadlines.

1.8 ORGANIZATION STUDY

There are five chapters to this study which has been organized. General introduction of the study is the first chapter presented; this consists of research background, problem statement, the research aim and objectives, the scope of the study, research methodology and the structuring of the study. Chapter two entails an in-depth literature review of precedent studies undertaken around the same research topic. In the third chapter, a detailed clarification of the research methodology will be covered, where subjects such as data collection, sampling method, questionnaire scheme, and method of questionnaires distribution will be covered. Chapter four addresses the method of evaluation and analysis of collected data collected. Chapter five covers suggestions, areas for further research, conclusions, and contribution to knowledge in much detail

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

This chapter analyses and discusses existing literature on various concepts and background of stakeholder interference on contractor performance on project delivery in the construction industry. It touches on the extent of awareness of stakeholder interference, the stakeholder interference factors on performance, the effect of stakeholder interference on the performance of contractors, the measure that control the effect of stakeholder interference on performance of contractors during project delivery in the Ghanaian construction industry. Insights and background knowledge obtained from the literature review will assist in understanding the role that stakeholder interference plays in keeping up the competitive edge inside the construction industry.

2.2 THE CONCEPT OF STAKEHOLDER

The stakeholder concept was initially brought into the management domain by the Stanford Research Institute in 1963, where stakeholders were described as any groups or individuals who are crucial for organizational and survival (Mok, Shen and Yang, 2015). Following its origin, the stakeholder notion diverged into four key directions concerning organizational studies: corporate planning, systems theory, corporate social responsibility and organizational theory. A well-known book of (Harrison, 2018) Freeman (1984), *Strategic Management: A Stakeholder Approach* has been widely acknowledged as a landmark in the evolution of stakeholder management (SM) research. (Yang *et al.*, 2009) defined stakeholder as the ones “who can affect or is affected by the achievement of the firm's objectives”. After this notable publication, different perspectives of stakeholder management research emerged; for example, the three

aspects(descriptive instrumental and normative)of sorting dynamics(Olander and Landin, 2005),the concepts of stakeholder dynamics ,the stakeholder salience and the typology (Olander and Landin, 2005)summarized the overall development of stakeholders management research through a stakeholder literature map. Inspired from stakeholder research of strategic management field, construction management scholars have devoted extensive research efforts on managing construction project stakeholder in recent year; while stakeholder management in construction projects has become a particular theme of growing research interest, in view of the challenges encountered in engaging stakeholder of complex project environment as explained.

2.3 THEORY OF INTERFERENCE

Events and actions that disturb the construction programme are referred to as interference. common interruptions which influence the flow of work in the project is refer to as interference according to (Kikwasi, 2013), (Howick *et al.*, 2009) point out that many interference to construction projects are planned for at the bid stage because they may be expected to unfold during the project (Bourne and Walker, 2006) For example, usually some level of rework expected, even when everything goes well, because there will always be ‘normal’ errors and mistakes made by both the contractor and the stakeholder (Ibid)

2.4 PERFORMANCE MESUREMENT

Performance measurement focuses on contractors on how stakeholder interference affects both monetary and non-financial performance of a construction work. Stakeholder goals attainment is facilitated by it, monitors its progress and defines its significance and worth (Wiig, 1999) (Martensson, 2000); , (Orth, Smolnik and Jennex, 2009); (Davenport, 2014), (Choi, Park and

Kim, 2005). Measurement helps to determine the usefulness, value and benefits of contractors performance to the shareholder, authenticating the continued upkeep and sureness of contractors performance (Gyadu-asiedu, 2009) the criteria.

2.5 OVERVIEW AND THE ROLE OF THE STAKEHOLDER

The understanding of projects management practices as an alliance of powerful individuals and interest groups remain as one of the most important issue in construction project delivery (Newcombe, 2003) These powerful individuals and interests group are termed as stakeholders .In effect, stakeholder are those who have a stake in the success of a project as well as the environment within which the project operates and can significantly influence the success of a project (Newcombe, 2003) However, in the earlier works of (Bryson, 2004) posit that stakeholders are any persons, groups or organizations that can place a claim on an construction attention, resources or output, or is affected by that output. To this extent, (Nutt, 2006) contended that stakeholder are therefore individuals in a position to influence the construction project or place demands on it. In other words, a stakeholder ultimately determines whether a project is a success, based on the project result (Search, 2001) Admittedly, stakeholder are individuals or groups, inside or outside the construction project, who have a stake in, or can influence the construction performance and are therefore, the major source of uncertainty in project delivery. It is therefore not surprising that large and complex construction projects attract the attention of such diverse and disparate people (Bourne and Walker, 2006) . Nevertheless, major issues, which, project management practices, consider in dealing with stakeholder, includes which stakeholders are relevant, how they might influence a project and what their project-related motives are (Ward and Chapman, 2008). This is due fact that stakeholder can be either

proponents or opponents; hence, it is essential to understand and evaluate the impact that they could bring to

the project (Olander, 2007). To this extent, stakeholder interference is considered as an integral part of project management process. However, stakeholder interference needs to balance competing claims on resources between different parts of the project on the performance of contractors, between the project and other projects and between the project and (Bourne and Walker, 2006). But an environment of uncertainty and complexity makes achieving this balance more difficult. (Turner and Muller, 2003)

Subsequent to this, (Hillman and Keim, 2001) suggested that stakeholder interference on contractor performance in project delivery, indeed, given reasonable attention to stakeholder as part of the project construction process would help to maintain the desired project implementation as well as avoiding unnecessary conflict and controversy (Olander and Landin, 2008) (Aaltonen, Jaakko and Tuomas, 2008) argued that managing the relationship between the project and its stakeholders is the key issue in project stakeholders' management. Stakeholder management is critical for projects, particularly to those being executed in demanding and unpredictable institutional environments (Ibid). Drawing from above, it appears that stakeholder interference cannot be neglected in project context due to its significant effect on the project outcome. Concisely, in project management practices stakeholders are categorized into two groups according to their legal or contractual relationship with a project: internal (or primary) stakeholders and external (or secondary) stakeholder (Niwa, 2007). Members who are part of the project coalition are referred to as internal stakeholders, and provide finance or have a legal or contractual relationship with the project as put forward by (Aaltonen and Kujala, 2010); (Dalglish *et al.*, 2007). Members that influence and are influenced by the project and also are

not normally engage in any transactions are refer to external stakeholders according to (Clarkson, 1995); (Dalglish *et al.*, 2007). Parties such as owners, consultants, suppliers, customers, users, contractors and financial institutes are usually internal stakeholders, while the public community, local residents, local or national authorities, interest group may vary according to the project. However, in GCI there are five main groups of stakeholder namely: client, consultants, contractors, community and local or national authorities. In the same vein, grouping these stakeholders into primary and secondary stakeholders indicate that client, consultants and contractors (main and sub-contractor) are primary stakeholders whilst secondary stakeholders include the community and local or national authorities(see table 2.3 below). Clients are described as the core or initiators of the construction process (Unerman and Bennett, 2004) ; Kamara et al., 2000; (Ieng *et al.*, 2012) and are therefore internal stakeholder who provide the funds for the project. They are divided into four, namely: Government (being the major client), Real Estate Developers, Investors and Owner occupiers. Consultants are individuals or organisations who have been well trained academically and practically to provide specialist service in the construction industry and are part of internal stakeholders. Indeed, appropriate and capable project consultants are the fundamentals to the success of a project (Akadiri, Olomolaiye and Chinyio, 2013) . The government and high profile clients normally engage these services. These consultants includes Project Managers(PMs) ,Architects(ARCH), Quantity Surveyors (QS), Geodetic Engineers (GE), Structural Engineers (St.E), Electrical Engineers (EE) and Services Engineers (SE). More so, they are all regulated by their professional institutions, namely, Project Management Institute; Ghana Chapter, Ghana Institution of Architects (GIA), Ghana Institution of Surveyors (GhIS) for the QS and GE and Ghana Institution of Engineers (GhIE) respectively.

Individuals or societies who represent the general view of the masses at the place in which the project physically takes place. In Ghana, the community groups form the largest part of the stakeholders in project management practices. These groups directly or indirectly affect or influence the project. It is therefore important that much attention be given to this form of stakeholders. Opinion leaders or chiefs in their localities mostly represent them. Hence, in order to ensure sustainable project management practice, the consultation of external stakeholders should not be ignored.

To this end, it is obvious the relevance of stakeholders towards the achievement of every organization's objectives is to some extent manifest in the above conceptualizations from the different authors but more of it can be seen in Bryson

ROLE OF STAKEHOLDER

(Moore, 1999) when they said; Attention to stakeholder is important throughout the project delivery because stakeholder interference for construction project certainly depends on satisfying key stakeholder to what is valuable by (Bryson, 2004) in his work. Performance of contractors are influence by stakeholder who are born and have interest. If key stakeholder are not satisfied, at least minimally there is interference on contractors which will eventually affect the construction process which will cause delays in the process, according to their criteria for satisfaction, the normal expectation should be that something will change, for example, budgets will be cut due certain things being taken out of the design due to incomplete designs, but at the end of the day the budget will increase due to inconsistencies and omissions in drawings, new initiatives will be undermined, and so on. Attention to stakeholder is also needed to assess and enhance political feasibility, According to (Finno, Bryson and Calvello, 2002) , (Campbell and Marshall, 2002) when it comes to achieving and articulating the common well. Finally,

attention to stakeholder is important to satisfy those involved or affected that requirement for procedural justice; procedural rationality and legitimacy have been met (Howick *et al.*, 2009); (Alexander, 2001) Note that what is being said does not imply that all possible stakeholders should be satisfied, or involved, or otherwise wholly taken into account, only that the key stakeholders must be, and that the choice of which stakeholder are key is inherently political (Backhaus, Stone and Heiner, 2002), has ethical consequences and involves judgment (Aguilera *et al.*, 2004) Stakeholder interference may impact the project delivery by the activity which will cause delay on the project. Stakeholder interference on contractor performance affect contractors in achieving its strategic objectives by delivery the project.

2.6 TYPES OF STAKEHOLDER

There are three types of stakeholder which are primary, secondary and key stakeholders.

2.6.1 Primary stakeholders

Primary stakeholder are affected, either positively or negatively by an organization's actions?

2.6.2 Secondary stakeholders

Persons or organizations who are ultimately affected by an organization's actions and acts intermediaries are called secondary stakeholders.

2.6.3 Key stakeholders

Persons or organizations who belong to both two stakeholder as describe above are called key stakeholders. (ALdayel, Aldayel and Al-Mudimigh, 2011)

2.7 OVERVIEW OF THE GENERAL CONSTRUCTION INDUSTRY

Research of construction project has become an increasing widespread interest in the engineering and project management domains .the fast pace of construction projects development can be attributed to the advanced construction technology and rapid globalization. Mega project is define as a substantial capital project ,capital project, of several billions dollars, which required concerted efforts from major participants in terms of resource, skills and expertise (Mok, Shen and Yang, 2015) there are numerous types of construction projects including transport infrastructures,oil and gas extraction,defence and aerospace,water and dams, power supply and urban development (Mok, Shen and Yang, 2015)

2.8 OVERVIEW OF THE GHANAIAI CONSTRUCTION INDUSTRY

The construction industry in Ghana, as in other parts of the world is huge and crucial segment in economic development (Kissi, 2013). According to (Gyadu-asiedu, 2009) adopted from (Kissi, 2013)is defined as a group of firms with closely related activities involved in the construction of real states,building,private and public infrastructure .the civil and engineering firms in Ghana under take projects which involve heavily engineering works like bridges, roads, building and dams, while the Building construction firms(BCF) also undertake projects such as the construction of schools,hospitals,health canters hotels ,offices. Furthermore Ghana construction firms(GCI) it is reported that the large ,medium and small construction firm form about 10% of the total number of construction firms registered with the ministry of water resources, works and Housing (Gyadu-asiedu, 2009) According to (Laryea, 2010) the Ghanaian economy is well-known for its fast pace of advancement within West Africa, this made possible due to contributions from the building construction industry. The building construction industry in

Ghana, as in different parts of the world, is a tremendous and an urgent fragment in monetary improvement. The Ghanaian building construction industry is very unpredictable in nature, and it speaks to a variety of compelling partners (Kissi, 2013). The building construction industry, as indicated by (Ofori, 2012) is essential as a result of the yields and results of its exercises. It adds to national financial advancement by providing the structures which are utilized as a part of the creation of all merchandise in the economy. These firms ,according to (Kissi, 2013) do not have the appropriate technology capabilities ,plant and equipment and key personnel to handle awarded projects properly and the evidence is the fact that the nation’s major construction projects are awarded to the very few large foreign contractors.it is well known that an active construction industry contributes to growth as it employs skilled and unskilled labour,from engineers and consultants to artisans and labourers (‘UNESCO , 2010 Table of Contents’, 2010).The development sector in Ghana holds huge potential for fortifying development and producing work. Quick extension of the sector by the government and private sector activities have activated off development exercises and powered request in development. Equipment and Materials including earth moving machine as stated by (Osei-Kyei and Chan, 2015) in the construction industry. A crucial industry having solid in reverse and forward development linkages. It manages every financial movement coordinated at the creation, redesign, repair or augmentation of settled resources as structures, structural designing structures, arrives enhancements and advancements. Causality interfaces between the developments in the building and the large scale of the Ghana economy played a major role in the GDP which was alluded by (Anaman and Osei-Amponsah, 2007). A Granger causality test on time series was performed between 1968 to 2004 which prompted a progress in the GDP of Ghana. One of the significant drivers of financial development in the building and road construction industry in Ghana is

considered. As indicated by the Ministry of Water Resources, Works and Housing, which is in charge of the housing and development all through the nation, building contractors are ordered into four groupings. Building contractors are grouped with a combined D and K classifications which empower and embrace building and civil works according to (Ofori-kuragu, 2013). The classifications of contractual workers for the contractors for building and civil works classification contractors are exhaustive in table 2.0 as indicated by (O’Riordan and Fairbrass, 2014) , a greater part of the building construction industry in Ghana fall under D4K4 and D3K3 order. According to chartered institute of (O’Riordan and Fairbrass, 2014) and a building construction were more than 1600 to assume its due part in the economy and in financial improvement, it ought to have the limit and ability to take care of the demand put to it and to perform well. The business ought to likewise have the capacity to take the most extreme favorable position of the open doors for its own development. Consequently, endeavors ought to be made to guarantee the non-stop improvement of the industry.

Table 2.1: Ghanaian Contractors classification

Financial Class	Contractor Designation	Financial Limit of Projects
One(1)	D1K1	No limit
Two(2)	D2K2	US\$ 500,000
Three(3)	D3K3	US\$200,000
Four(4)	D4K4	US\$ 75,000

Source: GHIS (2006)

There eight categories (A, B, C, S, D, K, E and G) of contractors by the Ministry of Water Resources, Works and Housing according to type and works undertaken, these are

- Roads, Airports, and Related Structures (A);

- Bridges, Culverts and other Structures (B);
- Labour based road works (C);
- Steel bridges and structures: construction rehabilitation and maintenance (S);
- General building works (D);
- General civil works (K);
- Electrical works (E); and
- Plumbing works (G).

4, 3, 2 are the category each has been grouped into and 1 financial classes in increasing order. In addition, combined category of AB for road contractors, stated by (Dansoh, 2005) .Class 4 contractors can tender for contracts up to \$75,000; class 3 up to \$200,000; class 2 up to \$500,000. Class 1-take contracts of all amounts. However, a large number of small- and medium-sized firms, that is, classes 3, 4, and some few classes 1 and 2 who are internationally acclaimed in undertaking special projects and fall into in the categories D and K groups dominate the industry. Category 3, and 4 contractors in Ghana register with a little equipment and is of possible sole proprietor or few cases of partnerships, and generally characterized by great attrition rate. (Gyadu-asiedu, 2009) indicated that there are often more jobs within their financial class than those above their limits, and because they form the largest group, their performance affects greatly on the performance of the industry. Because of this, the classification by the Ministry of Water Resource, Works and Housing has been criticized as being too general and obsolete with the registration criteria, list of contractors and monetary thresholds are not regularly updated (Eyiah and Cook, 2003). D1 and D2 contractors are organized and more

stable hence taking on both bigger and smaller works. However, these firms (especially the D2 firms) do not always employ the very qualified workers. Foreign contractors who are Ghanaian base are perform better. Poor performance of Ghanaian local contractors .foreign contractors are awarded most of the major projects in the country. (Chileshe and Boadua Yirenkyi-Fianko, 2012) attributes this to the “non business like culture” with which indigenous firms operate in Ghana. Communities and Local or National Authorities are public organizations involved in construction projects, including government authorities, labour unions, trade associations and nationalized industries (Akadiri, Olomolaiye and Chinyio, 2013). The influences of these parties on a project are varied. Some of the public agencies of government authorities, such as planning departments and building departments, have a legitimate authority

Contractors with financial class 4, 3, 2 and 1 in increasing order can combined with AB contractors can tender for contracts. Class 4 contractors can tender for \$75,000 contracts, class 3 contractors can tender for up to \$200,000; class 2 up to \$500,000. Contractors with Class 1-take contracts of all amounts. However, a large number of small- and medium-sized firms, that is, classes 3, 4, and some few classes 1 and 2 who are internationally acclaimed in undertaking special projects and fall into in the categories D and K groups dominate the industry. Contractors with class of 3, and 4 in Ghana able to register with as little equipment as possible and is of sole proprietors, (few cases of partnerships), and normally characterized by high attrition rate. (Gyadu-asiedu, 2009) indicated that there are often more jobs within their financial class than those above their limits, and because they form the largest group, their performance affects greatly on the performance of the industry. Because of this, the classification by the Ministry of Water Resource, Works and Housing has been criticized as being too general and obsolete with the registration criteria, list of contractors and monetary thresholds are not

regularly updated (Eyiah and Cook, 2003). The two upper classes (D1 and D2) are more organized and hence more stable, taking on both bigger and smaller works. However, these firms (especially the D2 firms) do not always employ the very qualified workers. The Ghanaian-based foreign contractors are able to do this and hence performance better. Vulink, (2004) noted that because of the poor performance of Ghanaian local contractors, most of the nation's major projects are usually awarded to foreign contractors. (Assibey-mensah, 2012) attributes this to the "non business like culture" with which indigenous firms operate in Ghana. Communities and Local or National Authorities are public organizations involved in construction projects, including government authorities, labour unions, trade associations and nationalized industries (Akadiri, Olomolaiye and Chinyio, 2013). The influences of these parties on a project are varied. Some of the public agencies of government authorities, such as planning departments and building departments, have a legitimate authority within the project as construction projects have to be designed and built according to the building regulations and have to be approved by government authorities. In addition community groups are individuals or societies who represent the general view of the masses at the place in which the project physically takes place.

2.9 STAKEHOLDER INTERFERENCE FACTORS ON CONTRACTORS

PERFORMANCE

(Kikwasi, 2013) point out that the main factors of stakeholder interference are the lack of qualified and experienced personnel. A study by (Yang *et al.*, 2009) recognized ten most critical causes of stakeholder interference and put it like theses as building permits approval, change order, changes in drawings, incomplete documents, inspections, changes in specifications, decision during development stage and shop drawings and approval. (Sambasivan and Soon,

2007) identify ten most important factor of stakeholder interference in Malaysian construction industry as contractor's improper planning, contractor's poor site management, inadequate contractor experience, inadequate client's finance and payments for completed work, problems with contractors, shortage in material, labor supply, equipment availability and failure, lack of communication between parties, and mistakes during the construction stage. Other (Kikwasi, 2013) identify the factors of stakeholder interference on contractor performance to include changes in project scope and requirements; design errors and omissions; inadequately defined roles and responsibilities; insufficient skilled staff; force majeure which include natural disaster like flood and earthquake. The study also acknowledged others which are: the research acknowledges financial and payment problems, improper planning, poor site management, insufficient experience, and shortage of materials and equipment as other form of factors interference. Effects and new technology as put forward by (Zou, Zhang and Wang, 2012) categorize construction interference as technical, social, construction, economic, legal, financial, natural, commercial, logistics, and political also, According to (Gokte, 2001) there are three most significant stakeholder interference which is made up of: weather, productivity of labour and plant and quality of material. The operational, sovereign, regulatory, demand, supply are other category of stakeholder inference factors as put forward by (Miller and Lessard, 2001)

Time related stakeholder interference identified by (Zou and Zhang, 2009) that are have influence on project delivery on contractor performance are: tight project schedule, design variations, excessive approval procedures in administrative government departments, variations by the stakeholder, incomplete approval and other documents, unsuitable construction program planning and inadequate program scheduling. (Blok, Hoffmans and Wubben, 2015) point out stakeholder interference that adversely impact construction project delivery is time performance

are: quality of management during construction; quality of management during design, and design coordination. These are however group in these factors as interference on the delivery of construction project which was put forward by (B.P Sunjka and U.Jacob, 2013) as stakeholder related interference, contractor related interference, labour and equipment related interference, material related interference, community related interference ,external interference. These interferences has an effect on the contractor in project delivery.

2.9.1 Stakeholder related interference

2.9.1.1 Planning

Planning is one of the key elements of every project and failure to plan vividly can cause the project's failure which results in the stakeholder interference on the contractor. This is one of the most common problems that bring about project failure. (B.P Sunjka and U.Jacob, 2013). If project deliverable and how these would be achieved are not clearly outlined in the planning phase of the project, projects are likely to fail (Pinto, 2013) resulting in interference which causes delays in the delivery of the project. In other words, projects that start without understanding the full content or the project baseline/constraints of what the project seeks to achieve is susceptible to failure. Root cause of project failure is due to poor initial planning through the phases of projects according to (Pinto, 2013) also according to research most project failure is due to ineffective planning. Scheduling and planning account for delay in Nigeria construction firms as indicating by (Odeyinka HA, 1997) . In Iranian construction industry identified the same problem (Pourrostam, Ismail and Mansournejad, 2011). The same reason account for project delay with regards to large construction works. (Assaf and Al-Hejji, 2006).

2.9.1.2 Communication

Communication Studies over the years proves that effective communication is vital in project environment, it helps to avoid duplications of information; and communication provides all the necessary parties involve in the project with relevant information on time for effective and efficient delivery of project (Raymond and Bergeron, 2008); (Wong, Wong and Nadeem, 2009); (Wi and Jung, 2010). Therefore failure to communicate effectively prior to and during project implementation is recipe for disaster. Lack of communication in some circumstances could lead to conflict in project's management. This is manifested in the study of conflict among project partners by (Ruuska and Teigland, 2009) . The study concluded that lack of communication leads to conflicts in projects and eventual project failure.

2.9.1.3 Inconsistencies and omissions in design

Critical factors that results in interference in construction projects alluded by (Ramabodu and Verster, 2010) in construction projects is incomplete design or Inconsistencies and omissions in design at the time of tender, due to this, designs are released to contractors to start work impromptu, due to urgency on the part of the stakeholder for work to start due to one reason or another. As the contractor is into the construction half way now that the architect brings updated designs for the contractor, making cost and time to have impact on the construction, which makes the duration of the contract to extend and also increase the cost of the project due to the update of the design and additions of some elements which were not part of the designs from the handing of designs to the contractor. Lack of planning and monitoring and changes in scope of works, delays in costing variations and additional works. Other researchers looked into the factors that contribute to delays as a results of interference on performance of contractors as

identified by (Chan, Scott and Chan, 2004) including five principal influence of Interference which causes delay as: slow decision making, stakeholders-initiated variations, and poor

2.9.1.4 Scope Change

This has been one of the main areas that contribute to project failure. Most project research points at that scope change is a major contributing factor for project failure (Kaliba, Muya and Mumba, 2009); In most projects, requirements are either altered before the commencement of work or altered half-way through the projects' life-cycle but rarely are these changes effected on the completed date. This is more evident in IS project management (Savolainen, Ahonen and Richardson, 2012)

2.9.1.5 Socio- cultural

Research on cross-cultural management indicates that western management concepts, models and practices are incompatible with other culture and social settings (Sui Pheng and Yuquan, 2002); (Högberg and Adamsson, 1983); (Dadfar and Gustavsson, 1992); (Jones *et al.*, 1997); (Muriithi and Crawford, 2003) This indicates that management concepts do not have cross - cultural validity (Muriithi and Crawford, 2003) and as such adopting management practices that are not country-specific can contribute to project failure. The work of (Sui Pheng and Yuquan, 2002) on the mental programming of people from 53 geographical areas shows that cultural differences affect the approach needed for successful project management in these countries. In relation to project management, this is not different. Studies on project failure in developing countries show that the fundamental reasons often cited for project failure is culture (Saad, Jones and James, 2002); (Muriithi and Crawford, 2003); (Alsakini, Wikström and Kiiras, 2004).

2.9.1.6 Resources

Resources are broad and are classified as tangible or intangible (Ruuska and Teigland, 2009). According to (Ruuska and Teigland, 2009) resources include financial, human, goodwill, reputation, material resources and expertise. Or inadequate resources have shown how project fail

2.10 Material related interference

Physical goods needed for the execution of a project are term material resource and without it, physical deliverable cannot be implemented due to project requirement. Scarcity of resources was discovered by Bygga Villa as one of the major conflict reasons, which contributed to the initial project failure (Ruuska and Teigland, 2009)

2.10.1 Financial Resources

Lack off or inadequate funding have abandon major projects in developing countries. According to World Bank \$4.2 billion dollars was withdrew from its financial backing due to failed Chad-Cameroon pipe-line project according to (Maunula, 2014) .it is alluded by (Sambasivan and Soon, 2007) that the same problem exists in Malaysian construction industry. The problem in Jordan is not different. Contractors faced financial difficulty and is most frequent and first cause of building and road construction project issues in Jordan (Sweis *et al.*, 2008)

2.10.2 Delay on the part of contractor

The impact or consequences of delay in project completion is termed the effects of project delay.

(Memon *et al.*, 2011) the effect of delay is change or impact affecting interference.

There are ways in which delays come as a result of delays in contractor's progress, payment by stakeholders and design changes, relationship between contractor and stakeholder.

Similarly, (Odeh and Battaineh, 2002) also conducted a survey aimed at identifying the most important causes of delays in construction projects with traditional type of contracts from the viewpoint of construction contractors and consultants. Results of the survey indicated that contractors and consultants agreed that owner interference, inadequate contractor experience, financing and payments, labour productivity, slow decision making, improper planning and subcontractors were among the top ten most important factors. Improper planning by contractors, poor site management and inadequate contractor experience was identified by (Sambasivan and Soon, 2007) as some aspects which causes delay on the part of the contractor thereby delaying their performance .event that disrupt and disturb the construction programme are refer to interferences. Interferences with the flow of work in the project are common disruptions (Howick *et al.*, 2009) point out that many interference to complex projects are planned for at the bid stage because they may be expected to unfold during the project (Howick *et al.*, 2009)For example some level of rework is usually expected even when everything goes well, because there will always be 'normal' errors and mistakes made by the stakeholder and contractor. (Ibid)

2.10.3 Improper contract packaging /delivery strategy

Stakeholder (client) packing and delivery of contracts are usually outsource to consultants who are professionals. Issues and errors which are not properly captured interference with the performance which must be addressed before projects activities can progress otherwise issues may arise and lead to legal redress.

2.10.4 Long waiting time for inspection and testing

Quality is link to performance, such that regular quality control in terms of inspection and testing stakeholder quality assurance activities, regular monitoring and feedback. Before further activities could be carried out. Under the washing eyes quality improves when stakeholders give regular monitoring support. (Darda *et al.*, 2014) made it known that quality work on site are linked to availability of resources and clear scope. Usually stakeholders are tasked with responsibility of coordinating such exercises delays in these impede project progress

2.11 Labour and equipment related

2.11.1 Operational relationships

Lack of qualified and experience personnel in the construction sector on the part of the contractor subletting some aspects of the works causes delay which results in interference on the work of the contractor which affect the performance which causes delay .Delay in Saudi Araba construction sector in public projects is the lack of qualified and experienced personnel as put forward by (Al-Kharashi and Skitmore, 2009). Attested that procuring material and equipment to construction site have delays in the delivery of project. Results organizational weaknesses,

suppliers' defaults governmental regulations and transportation delays influence the performance of work.

2.11.2 Human Resources

Scarcity of resources discovered due to conflict by Bygga Villa is one of the major reasons for conflict among project partners, which contributed to the initial project failure as recognized by (Ruuska and Teigland, 2009). Skilled and inadequate manpower has contributed to project failure in Malaysian account for by (Sambasivan and Soon, 2007) . In Indonesia construction projects a significant number of construction workers had to be hired which was further echoed in the work of (Hwang and Ng, 2013) which argues that ‘‘a competent project manager is vital to project success’’. Projects managers must manage project professionally and successfully, based on the knowledge and skills they possess as indicated by (Hwang and Ng, 2013) . (Perkins, 2007) attributes the root cause of project failure of project by project managers is due to ‘‘Knowledge’’ which either project managers do not have the requisite knowledge.

2.12 Contractor related interference

2.12.1 Contractor schedule

Planning and scheduling deficiencies, deficiencies in cost estimates prepared, waiting for information, mistakes during construction contribute to delays which was identified by (Frimpong and Oluwoye, 2003) these things poses a lot of delay works making the stakeholder interfere in the delivery of the contractors' works making project delivery time to extend. (Aiyetan, Smallwood and Shakantu, 2011) point out that the three most significant factors that

adversely impact construction project delivery time performance are: quality of management during construction; quality of management design and design coordination.

2.12.2 Time Performance:

Time performance of large construction project was conducted by (Assaf and Al-Hejji, 2006) came out with the findings. Prompt and diligent manner of work shall proceed with the contractor, in accordance with Contractor's schedule as amended from time to time. Time is of the essence with respect to contractor's performance as alluded by (Zou and Zhang, 2009) identified time has an influence on performance due to project delivery. All work shall be completed so as not to cause delay in the progress of the project or interference with other contractors. The contractor in agreement with the stakeholder shall arrange certain portions of the works in preference to others Work in several areas of the project may be scheduled concurrently. Several mobilizations may be required. Contractor agrees to perform all work in accordance with Contractor's schedule, as amended from time to time. It is observed that most important success factors for schedule compliance are availability of resources as planned throughout the project, timely and valuable decision from stakeholder a high degree of trust shared by project stakeholders need thoroughly and no bureaucratic interference (Eilert and Robinson, 2018) put it as timely decision from stakeholders and availability of resources on the part of contractor help to build trust and avoid delay. Obviously, (Chan, Scott and Chan, 2004) put it to certain extent avoid bureaucratic interference during execution .The role of the stakeholder and their timely decision is vital for contractor schedule (Divakar and Subramanian, 2009)

2.12.3 Contractor's Failure to Perform

Contractor subletting certain works to subcontractors. Subcontractor's failure to perform is another area which makes project delivery a problem meeting deadline causing the stakeholder to have influence on main contractor to influence the performance of a subcontractor thereby making the stakeholder interfere with the works, where a main contractor has hope and confidence in a subcontractor that he/she chooses the subcontractor may not be well vest in that particular area and does shoddy work which will not meet the main contractor expectation causing interference and influence by the stakeholder

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2.12.5 Complex nature of the construction industry

Events that disrupt and disturb the construction programme are referred to as interference. According to (Howick *et al.*, 2009) interference with the flow of work in the project are common disruptions. (Howick *et al.*, 2009)point out that many interference to complex projects are planned for at the bid stage because they may be expected to unfold during the project (Howick *et al.*, 2009).for example some level of rework is usually expected even when

everything goes well, because there will always be ‘normal’ errors and mistakes made by both stakeholder and contractor

2.12.6 Construction management skills or Skills Shortage

Lack of planning and management skills is one of the problems of contractors(ILO,1987:47),contractors finds it difficult to acquire experience workers in relation to their area of work ,the type of project, Due to the salary and in security of workers in developing countries has contributed to shortage in experience and killed workers. Problems of skills shortage affect contractors in delivery of project on the site and these have attributed to a number of factors these are the introduction of new technologies, which have reconstituted the skills required (Agapiou, Price and Mccaffer, 1995) failure to develop multi-skilling as a route to overcome skills shortages (Scott and Cockrill, 1997); Contractor have reduced the growth in self-employment due to commitment and investment in training within the industry according to (Harvey, 2001, p. 50); and wastage rates amongst the industry’s principal occupational groups (Bosworth and Dutton, 1990; (MacKenzie, Kilpatrick and Akintoye, 2000). labour market reliant upon casual workforce I a factor combination, incorporating high levels of self-employment, low levels of training investment and hence, low quality skills (Briscoe and Dainty, 2005). (Fong and Jaggar, 2006) has put it across that low level of training investment has been cited as an underlying cause of high cost and low productivity of UK industry in comparison with France and Germany . The Construction training system itself is out of step with many of its European Union partners, being employer-led, largely confined to the traditional trades and dominated by qualifications broken into narrow task-related units (Clarke

and Herrmann, 2004) . The inevitable fragmentation that flows from this structure arguably narrows the industry's skills base and delimits innovation within the sector.

2.12.8 Leadership styles

The construction industry is one of the most important industrial sectors which has work performance and leadership styles in an economically developing country such as Ghana. Proper leadership style of contractors is necessary to sustain the industry .According to (Nguyen, Ogunlana and Lan, 2004) the uncertain nature. of the construction industry has difficulty and dynamic to create daily problems for professionals to achieve the best leadership style.

Contractors must recognize their workers individual needs and their life goals. In construction management leadership research is gaining increasing importance since it can affect the work performance and impact project outcomes. Construction project can go on smoothly if appropriate leadership performance is adopted and desired. In addition, adopting suitable leadership approach will create subordinate satisfaction. Satisfied subordinates are likely to put much effort into their work. Construction project managers in Thailand and examines the relationships between leadership behaviors and leadership outcomes that explore the actual commitment level and leadership style

2.13 External factors

2.13.1 Work and business Environment-related Factors

According to (Chan, Scott and Chan, 2004) various researcher support the environment as a factor affecting project. Which was further stated by (Chan, Scott and Chan, 2004) described “environment” as all. construction project, including social, political, and technical systems and

external influences. economic environment, social environment, political environment, physical environment, industrial relation environment, are the attributes which are used to measure factors and level of technology advanced attribute used on construction project.

2.13.2 Force Majeure

Natural disaster in like flood and earthquake are factors like natural disaster, example flood and earthquake that influence the contractor delivery of the project. Financial and payment problems, improper planning, poor site management, insufficient experience, and shortage of materials and equipment are other area which the research acknowledge by (Sambasivan and Soon, 2007)

2.14 EFFECT OF STAKEHOLDER INTERFERENCE ON CONTRACTOR PERFORMANCE

The effects of stakeholder interference in the construction industry is a global phenomenon and the construction industry in Ghana is no exception. The main purpose of this study is to determine the effect of stakeholder interference on contractors performance in project delivery(B.P Sunjka and U.Jacob, 2013) , project delays were considered separately due to the causes and delays earlier considered, separately. This study takes an integrated approach and attempts to analyze the impact of specific stakeholder interference .Six main effects of stakeholder interference were determine: (1) time overrun, (2) cost overrun, (3) disputes, (4) arbitration, (5) litigation, and (6) total abandonment. This study has also established an empirical relationship between each factor and effect of stakeholder interference.

2.14.1 Cost (budget overrun)

The study reveals that the major factors of stakeholder interference has an effect in the cost, which influencing cost overrun are: material cost increase due to inflation, inaccurate material estimation and degree of complexity as a results of the interference results in additional cost of the project. (Kikwasi, 2013).

2.14.2 Time overrun

The impact of the stakeholder interference on time performance result in time overrun .On the other hand, under time overrun, the most important factors causing delays are: design changes, poor labor productivity, inadequate planning, and resource shortages (Tabish and Jha, 2011) point out that the most common factors of stakeholder interference .(Olander and Landin, 2005) defines time as the duration for completing a project .Time overrun is one of the impact of stakeholder interference that is use to measured success or failure of a project (Mok et al 2015) Completed project which are smoothly and on schedule may suggest to contractors and stakeholder thus the component of time . Therefore contractors prefer contracts with reasonable amount of time to execute completely.

2.14.3 Litigation

Unresolved dispute due to claims can lead to court cases for the resolution especially when large penalties are at stake. Client-related, labor-related, contract-related, contract relationship-related, and external factors escalate disputes to be settled by the litigation process. The parties involved in the projects use litigation as a last resort to settle disputes.(Kikwasi, 2013)

2.14.4 Arbitration

The relationship between client and contractor related factors escalate disputes to be settled by arbitration process according to (Sambasivan and Soon, 2007) A competent third-party chosen to settle the disputes amicably between the stakeholder and the contractor .Without going to the court due to unresolved issues of claims.

2.14.5 Total abandonment

Abandonment of the projects is made up of stakeholder –related factor, labour –related interference, contract-related factor and external factors. Many projects were temporarily abandoned during the financial crisis between 1997 and 2000 in Malaysia. Promoters of various projects backed out because of poor cash flow and economic conditions. Many of these projects have now become so prohibitive that they have been abandoned permanently based on the discussions above, the next step is to provide suggestions to clients, contractors, and consultants to reduce delays. (Sambasivan and Soon, 2007)

2.15 MEASURE TO CONTROL STAKEHOLDER INTERFERENCE

The measure to control Stakeholder interference on performance of contractors in project delivery are that: The architecture can be shape early and all the input identified and also the most powerful stakeholder identified as well. This ensures their support and improves the quality of the models produced. Support from the more powerful stakeholder will help the engagement win more resource, thus making the architecture engagement more likely to succeed. By communicating with stakeholders early and frequently, the architecture team can ensure that they fully understand the architecture process, and the benefits of enterprise architecture; this

means they can support the architecture team more actively when necessary. The contractor team can more effectively anticipate likely reactions from the stakeholder for their models and reports, and can build into the plan the actions that will be needed to capitalize on positive reaction while avoiding or addressing any negative reactions from the stakeholder. The contractors can identify conflicting or competing objectives among stakeholders early and develop a strategy to resolve the issues arising from them. The reasons for a measure to control stakeholder interference are several: First, to become acquainted with the project stakeholder by the contractor; second, it is important for ensuring .there should be a balance between contribution and reward which talks about the second reason; third, it is a. basis for managing the stakeholders is the third reason ; Fourth, it is a .the basis for deciding who should be involved in determining the project goals and how success should be measured as put forward by (Karlsen, Græe and Massaoud, 2008) is the fourth reason. The IFC, (2007) reported that, Companies that have grasped the importance of actively developing and sustaining relationships with affected communities and other stakeholder throughout the life of their project, and not simply during the initial feasibility and assessment phase, are reaping the benefits of improved on stakeholder interference, and better outcomes on the ground; and that, the interferences associated with poor stakeholder relations and the opportunities provided by constructive ones are now better understood by the private sector and financial investors alike. They went further to state that, Compered to be prepared for the contractors that they are entering into a pre-existing yet dynamic context, with established histories and cultures, and often complex political, social, and economic relations between stakeholder and the contractor that can be thrown into stakeholder interference by the advent of a project and the development process that accompanies it. In other words, stakeholder relations can become politicized and complicated, and can lead to or exacerbate conflicts and other

unanticipated outcomes. The project environment is complex and changing (P Gilbert, 1983) . If stakeholder interference is not adequately addressed in the project, this can mean unexpected problems and uncertainty to the project caused by stakeholder interference. For instance, a clear and comprehensive definition of project success and failure due to interference may not be determined, and consequently the contractor may strive to meet goals that were never intended by the stakeholders (Eilert and Robinson, 2018). Highlighting more on Project environment, (Vink, Imada and Zink, 2008) also said that Project stakeholder interference involves gaining an understanding of the social and political environment in which your project is taking place. He went further to add that, Now that's easy to say, but more difficult to find out. Luckily, there are ways to get a good idea about stakeholder interference, before you embark on your project. For example, if you are going to be involved in a project with a stakeholder called ABC Ltd, then you could search Google Trends for stakeholder interference to see how the interest in that stakeholder varies over time, and how the interference will impact the project. The human dynamics of a project environment focus by stakeholder interference: managing relationships and communications. This essential process can help to ensure that your projects succeed and is not delayed. That notwithstanding contractor need to know that, there are some stakeholder who are more powerful than others because they know more about the project than anyone else. There will inevitably be some stakeholder requirements that can't be met within the bounds of your project so it's important to explain why, and be honest up-front.

What can stakeholder do to control the measure of interference, are

- ☐ Always let deliverables be clear and concise before construction start
- ☐ contractors must provide feedback on interim deliverables and milestones
- ☐ Delay the approval process must be avoided by stakeholder, to prevent interference

- stakeholder must provide any clear direction to contractors to prevent interference

Contractors must not undermine stakeholder authority which will cause interference resulting in project delays. all cases made against the stakeholder must be resolved as quickly as possible in project in public before start a competing project all stakeholder who matter must be identified and draws made must be complete to prevent inconsistencies and omissions in design. The best way to influence contractors must be to support them by providing early resolution to cases on site, which will minimized stakeholder interference on the project is to educate them about the benefits of the product and the project. Reframe to the stakeholder's perspective and ask .What in it for me(Vink, Imada and Zink, 2008) . Tuchman's account in her book, *The Match of folly* identifies ways of minimizing in stakeholder interference when she wrote that, ignoring the interests of stakeholders, and information held by, key stakeholders and 'Three outstanding attitudes: obliviousness to the growing disaffection of constituents, primacy of self-aggrandizement, and the illusion of invulnerable status are persistent aspects of stakeholder interference. (Nutt, 2006) analyzed 400 strategic decisions and revealed that half of the decisions 'failed' - that is they were not implemented, only partially implemented or otherwise produced poor results as a result of stakeholder interference – in large part because decision makers failed to attend to interests and information held by key stakeholder. Additional ways of preventing stakeholder interference that contribute to delays as a result are easy and early flow of communication, adequate resources assigned to the project by the contractor, early resolution to changes in the scope of work, favorable news about the project in the press, and resolution to negative community reactions to the project (Karlsen, Græe and Massaoud, 2008) Results from earlier research have identified that in many projects, stakeholder interference lacks strategies, plans, and methods (Karlsen, Græe and Massaoud, 2008). Stakeholder interference is often

characterized by spontaneity and causal actions, which in some situations are not coordinated and discussed within the project team. The result of this practice is often an unpredictable outcome. To address this, (Vink, Imada and Zink, 2008) said, Stakeholder, have a responsibility to improve themselves; you must be self-directed under changing and unclear conditions and must know what they want from the onset of the project to prevent interference. The stakeholder must stabilize the delivery of the project by stabilizing the works to prevent interference. If you are constantly overstressed, anxious, lacking in self-discipline and without vision then you are out of control and will have little credibility with those around you. You might be able to get people to comply by virtue of your position, but will not be able to motivate under stressful conditions from start to finish of the project; for a variety of reasons, you will probably not receive effective feedback from contractors. So give feedback to the contractor, a study carried out by (Karlsen, Græe and Massaoud, 2008) revealed that stakeholders create interference and uncertainty regarding project execution on performance of contractors. From the research, such problems and uncertainties are causing interference from by stakeholder and a measure to control those issues are decisions that were not taken or unexpected changes in specifications, the stakeholder was too focused on details, the stakeholder did not understand his or her role in the project, political guidelines that were unexpected changed, and the end user did not know his or her needs.

SUMMARY

This chapter discussed stakeholder concept, it also throw light on theory of interference and performance measurement, it goes ahead to give overview and role of the stakeholder, types of stakeholder. It further provides discussion on overview of the general construction industry and narrows it down to overview of the Ghanaian construction industry and its economy deliberately. The chapter also look into the factors of Stakeholder interference on contractor performance on project delivery, effects of stakeholder interference. Lastly, the chapter elaborated on the control measure of stakeholder interference involvement in construction industry.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The research methodology adopted is one of the essentials of the research activity as it details out the procedure, methods and logical keystones hired to accumulate the requisite knowledge for the research question in realizing the aim as well as the objectives of this study. The various deliberations are represented in Chapter three that went into the selection of the research paradigm. The presentation of the study population, sample size and how the size was selected are highlighted in this chapter. Moreover, this chapter outlines the data collection method is outline used and also the data analysis strategies that were adopted for the study. This chapter concisely defines the basis behind research method used for this study.

3.2 RESEARCH PARADIGM

The philosophical position a research takes has important impact on the research design as earlier made known by (Davis, 2014) Two key philosophical positions were acknowledged by (Bryman, 2004) with respect to community research, of which this research consists of, namely ontology and epistemology. Three key foundations according to Denzin and Lincoln view that paradigm demands: ontology, epistemology and methodology. Uninterruptedly guides in the selection of the appropriate research instruments have to be address by topical philosophical issues, epistemology, axiology, and ontology.

3.2.1 Epistemology

Epistemology captures the research and topic under exploration. As a branch of philosophy, epistemology focuses on how individuals decide what is suitable; positivism and interpretivist (Jacobs, 2016). Epistemology addresses what knowledge is and the nature of knowledge by investigating the complex relationship that exists between researcher and the research topic as put forward by (Saunders, et al., 2000;). Epistemology is broadly categorized into. There are two main areas to Epistemology these are; interpretivist and positivism according to (Saunders and Wynn, 2004) From the positivist perspective, society is regarded as an objective realism which could be elucidated by some laws. The methodology used in this viewpoint avoids human opinions or manipulations from the researcher (Kheni, Dainty and Gibb, 2008); (Bryman, 2004). On the other hand, interpretivist has a subjective perspective. Prominence is given to research subject and the researcher's interpretation and explanation is imperative (Bryman, 2004) Consequently, this research employs the positivist's approach. With positivists approach, science-based are obtained over the collection of verified data . The research postulated that the assessment of knowledge Management strategies in the Ghanaian Construction Industry should be conducted without the researcher's bias (in a neutral fashion) and conclusions must be drawn objectively based on the field data collected

3.2.2 Ontology

(Davis, 2014) opined that ontology is mostly concerned with the belief of the researcher about social world's nature and what can be identified of it. Ontology addresses issues linked to the state of reality, considering generally exploring the variants by which existence can be established (Saunders et al., 2000). The choice of ontology used in the study can be grouped into

two major groups: objectivism or subjectivism (Saunders et al., 2000). Using the ontological method, the system employed for this study is objectivism. This method is used since it replicates the research question. The research question being probed here does not factor in the researcher's influence and the strategies being inspected lie on peripheral facts. Adding to the above, knowledge Management practices in the Ghanaian Construction Industry are inherently unprejudiced and not manipulated by the researcher's bias or experience. The various research questions that was posed by ontological position have influence on objectivism

3.2.3 Axiology

Whether or not standards, which are associated with the research results determine by (Pathirage, Amaratunga and Haigh, 2005) Discourse that axiology addresses whether an objective measure may be employed to perform the study (value-free) or whether a subjective criterion is appropriate (value-laden). the researcher opinions does not affect the factors in the research question, a value-free outlook is selected as the axiological method.

3.3 Research Strategy

It is necessary to adopt the most appropriate research strategy to collect data and subsequently analyse them (Bryman, 2004). A research strategy outlines a guide leading from a precise method, to a suitable way to collect and analyze data (Denzin and Lincolns 2005). Research design refers to a framework or a plan that guides a study. Research strategy may be defined as the examination of research goals. Subsequently, the three main research strategies are qualitative, quantitative, and triangulation according to Baiden (2006). However, the decision to

select any of the strategies essentially is reliant on the aim the research, the nature, and the availability of information for the study (Baiden, 2006). The research strategy therefore determines the method to be used for data collection, which is also reliant on on the necessary information required from the selected sample. Research strategy can be undertaken through two prime ways; qualitative and quantitative (Saunders and Wynn, 2004) quantitative strategy was employed by this research onwards.

3.3.1 Quantitative Approach

To gather data for the study, self-administered questionnaires were distributed to research participants. Quantitative approach was adopted because the aim was to get an information that can be generalized to represent variables between financial status and academic quality post-graduate construction student. The study adopted the use of investigation design with a well-structured questionnaire administered by the researcher .to gather data for the study.

Table 3.1 Quantitative approach

QUANTITATIVE RESEARCH	
<i>Consequences</i>	Conclusive findings used to endorse a final course of action.
<i>Positioning to the role of theory to research.</i>	Inferential and related to verification of theory and hypothesis testing.
<i>Ontological orientation</i>	Objectivism
<i>Objective</i>	Gather accurate data and examine the correlation between relationships and facts in agreement with
<i>Epistemological orientation</i>	Natural science
<i>Data characteristics</i>	Hard data, large sample size, analyzed using statistical methods.
<i>Common data collection techniques.</i>	Test, questionnaires and prevailing database

Source: (Bryman, 2004)and Baiden (2006)

3.4 UNIT OF ANALYSIS AND DATA SOURCES

The collection of data is very essential in research. This is due to the fact data significantly facilitates understanding to a theoretic context (Bernard, 2002). This turn out to be imperative that in the quest to select the method of getting data and also from whom the data would be gathered, according to .(Tongco, 2007) to considerable care should be taken for it to be done in order to get a sound judgment since not any amount of analysis can cater for data that was collected improperly .For this study, the data used are mainly primary and secondary source of data. For the sake of recognizing gaps in the research and appropriately placing the work in its suitable background, literature appraisal was undertaken. The ancillary sources entails present

literature from technical papers, academic journal, proceedings from conference and the like. Primary data was obtained from Quantity surveyors, Architects and Site Engineers in the form of field survey (questionnaires). These groups of individuals were identified as the unit of analysis.

3.5 POPULATION

Population is defined to be the composition of all individuals of whom measurement is taken according to (Kagioglou *et al.*, 2010). In order for a research to be conducted, a population must be defined from the unit of analysis. Rea and Parker (1997) assert population is the all-inclusive list of conceivable participants encompassing the unit of analysis. The research was conducted to control effect of stakeholder interference on contractors' performance in the Ghanaian Construction Industry. Study population included Engineers, Designers/Architects and DIKI and D2K2 construction firms, Contractors and Statutory bodies. Due to its large population size of the professionals and construction firms in the Accra Metropolis which numbers over one hundred, a target population of seventy- five (75) was adopted for this study. Nonetheless, because of the absence of updated list of contractors at the ministries during data collection, only recorded membership and paid-up lists of the Association of Building and Civil Engineering Contractors of Ghana (ABCECG) were considered. The ABCECG is the authority body for both civil and building construction firms in Ghana, which is monitors the daily undertakings of its members.

3.5.1 SAMPLE FRAME

The entire populace cannot be define, therefore defining a sample due to monetary and time constraints make it practically unmanageable threshold is inevitable. The sample subdivides the overall population being studied and this helps in getting whole population information indicated by (Henry, 1990). When done correctly, sample size can give the necessary selection of statistics about the entire population.

3.5.2 SAMPLE SIZE

The act of taking a part of the entire population to represent that exact population is sampling. Sampling is defined as the process of picking a representative of a whole. Because of the relatively bigger size of a target population in many studies impractical and improbable to carry out a survey of the entire target group due to financial and time constraints. Naoum (2008) stated that when considering a larger population, the percentage of the sample size needs to be smaller and vice versa, that is, if the entire population is smaller, the sample size should encompass a relatively lager proportion of the population. In order to attain an accurate conclusion and a more concrete prediction, the researcher should consider using a larger sample than a relatively smaller sample (Rolfe, 2006) .

A sample size of 43 was chosen for this study by using the Yamane(1967) formula for calculating the sample size, using a precision (e) of 10%.The sample category is made up of contractor(D1K1,D2K2) twelve(12),Designer/Architect ten(10), Engineers ten(10),Construction firms nine (9) and Statutory bodies two(2)

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

Where n is the sample size, N is the population size, and e is the level of precision.

$$n = \frac{75}{1 + 75 (0.1)^2}$$

$$= 42.85$$

$$= 43$$

Table 3.2 sample size

Sample Category	No. of sampled size
Contractors (D1K1,D2K2)	12
Designer/Architect	10
Engineers	10
Construction Firms	9
Statutory Bodies	2
Total	43

Two questionnaires were distributed to each respondents which resulted in the eighty-six. On a whole, a total number of eighty-six questionnaires were sent, out of which seventy-five were retrieved which represent 87.21% response rate showing a higher percentage of responses, which was acceptable for the analysis since it's more than 50% of all the respondents.

3.5.3 SAMPLING TECHNIQUE

Several sampling techniques exist for various purposes. Purposive sampling technique were employed for this study which the main sampling. The sampling technique used in the study based on the research design, purpose, and practical implication of the study.

Simple Random sampling technique is that method of drawing a portion (sample) of a population or universe so that each member of the population or universe has an equal chance of being selected. That is, this type of sampling gives all units of the target population an equal chance to be selected. Randomization is effective in creating equivalent representative groups that are essentially the same on all relevant variables thought of by the researcher according to (Amin *et al.*, 2005)

Probability whereby, people, places or things are randomly selected is refer to Random sampling which was used to select respondents as alluded by Kombo and Tromp. Firms using purposive sampling. (Zou, Zhang and Wang, 2012) according to him purposive sampling is useful method of sampling were information from a sample of population that one thinks knows most about the subject matter is allow by the researcher for information

(Kothari, Leone and Wasley, 2005) posited that, the basis for employing purposive sampling technique relies on the condition that the selected items typically represents the whole population considered in the study. The sample representation of Construction professionals for the study was selected using this strategy bearing in mind the registration of classifications (D1K1/D2K2) of the company they worked for. This class of construction were chosen because most of the firms have the technical expertise (in the field of stakeholder interference) and uses modern methods of project delivery.

3.5.4 DATA COLLECTION INSTRUMENT

An economical way of gathering the needed data from a possibly large pool of respondents questionnaire as depicted by Polgar and Thomas (2005) (Saunders and Wynn, 2004); Fellows and (Leung and Liu, 2003). A data gathering instrument that has set of designed and structured questions is a questionnaire, to solicit answers and responses from various respondents (Sekeran, 2003). Formulating these questions took a lot of consideration to guarantee that the responses be measurable.

Mail questionnaire, self-administered questionnaire, phone questionnaire and internet questionnaire (use of survey monkeys, emails etc.) are four main ways of administering questionnaire according to Frazer and Lawley (2000) this study therefore employs the use of self-administered questionnaire. In formulating the questions, the format adopted were mostly closed ended choice format. The open ended enables the respondent to formulate or provide answers on their own whereas in the close ended, respondents are restricted to select from a provided alternatives. It was therefore easy in recording, coding and analyzing the results quantitatively and easily reporting the results.

3.5.5 QUESTIONNAIRE DESIGN AND FORMAT

Requisite information from the. Respondents were collected as primary data by the administering the questionnaire. The questionnaire was designed in line with the research objectives in relation to the comprehensive literature review conducted on the topic and demographic characteristics were also elicited. Respondents were asked to rank based base on a Likert scale of on a five point scale arrangement with various statements. Target respondents for the questionnaire involved experts in the field of construction and professionals such as

Contractors, Designers/Architects, Engineers and Statutory bodies of DIKI and D2K2 construction firms.

The format of the questionnaire used in this research to meet the stipulated objectives is separated in four main sections: 'A', 'B', 'C' and 'D'. Demographics and biographical data of the respondents was investigate under section A'. Section 'B' sought to the determine stakeholder interference factors in the Ghanaian Construction industry. Respondents were asked to rank based the Likert scale of five point scale arrangement with various statements. Section 'C' sought to determine the effect of stakeholder interference on performance of contractors in the Ghanaian Construction Industry. A 5-point Likert scale was employed here ranging from **1-No impact; 2-low impact; 3-moderate impact; 4- high impact; 5-Very high impact**. The Section 'D' also sought to explore measures that control the effect in the construction industry with a 5-point likert scale thus from **A-unimportant; B-Slightly important; C-Moderately important; D- important; E- very important** been employed here.

3.6 DATA PROCESSING AND ANALYSIS.

The means of interpreting the gathered data (Strydom *et al.*, 2007) by which answers were found is refer to as Data analysis. Interpreting here simply means finding meaning and to explain. According to (Saunders and Wynn, 2004) there are three major activities for analyzing data these are reduction of data, presentation of data and drawing of conclusion. Analysis of the data collated for the purpose of this work were captured in the analysis in the three major steps. The main aim of the analysis stands to reducing data to a clear and understandable form and also in a form that can make the data interpretable so that research problem relations can be

deliberated upon, verified and also allow the drawing of conclusions. The data gathered were structured outlined for the research objectives were gathered.

Parametric and non-parametric statistical test were the statistical tool adopted. In Picking one over the other, much attention was given to the measurements level recognized in the study and also the type of variables. Descriptive statistics, Relative Importance Index (RII), mean score index, Chi-square were the statistical method adopted for the analysis.

Descriptive statistics entails using percentages, frequency charts amongst other to illustrate the results. The results derived from the analysis necessitated some discussions. Identified patterns and nonconformities were unambiguously discoursed. Details for the conclusion of the analysis present as well in line with findings from preceding studies.

3.7 CHAPTER SUMMARY

This chapter principally presented the methodology used to undertake this study, and the process through which the data collection instrument was designed. The variants of research paradigms was discussed in this chapter that existent literature suggested. The goal of the research was established on the required philosophies which were selected. Subsequently, research strategie choice based on the selected research philosopher was made. The sampling technique was presented in this chapter and how the sample size for the study was obtained. Primary data for the study was gathered by both open and closed ended questionnaire for the primary data. The chapter closes with a brief discourse of the selected data analysis method adopted for the study. With this expounded background the following chapter discusses and analyzed the result.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS DISCUSSION

4.1 INTRODUCTION

Discussions of the field survey outcome after the data collection are presented in the Chapter four. Primary and secondary data gathered from the various respondents is analyzed in this section, composed of contractor (DIKI, D2K2), Designer/Architect, Engineers, statutory body registered and operational in building and road construction firms in the Accra Metropolitan area. With respect to the analysis, the tools adopted for use took the form of the simple descriptive statistics, mean score index, Relative Importance Index and Chi-square test. The study is pivoted around the objectives of the analysis, that is, to determine the stakeholder interference factors on performance of contractors during project delivery, to determine the effect of stakeholder interference on the performance of contractors during project delivery and to explore measures that control the effect of stakeholder interference on performance of contractors during project delivery in the construction industry.

4.1.1 SURVEY RESPONSES

Seventy-five (75) questionnaires were retrieved out of a total number of eighty-six (86) questionnaires distributed to contractors (D1K1, D2K2), Designer/Architect, Engineer and statutory bodies all from registered and operational D1K1 and D2K2 building and road construction firms in Accra Metropolitan Area. Total of eighty-six (86) questionnaires were administered by using simple sampling technique. Because of personal distribution and the persistent follow-ups to retrieve the questionnaires seventy-five was retrieved indicating a high

response rate of 87.21%. which shows more than 50% of the respondents. Therefore it is appropriate for the analysis.

4.2 DESCRIPTIVE ANALYSIS OF DEMOGRAPHIC DATA

Respondent basic information were sought out with questionnaire to get the understand about their various characteristics and the key relevance of this section that establishes the trustworthiness and Data included in the analysis of the demography were gender of respondent, respondent's highest level of education, current position in organization, and length of stay in the construction industry and contractor category.

4.2.1 Gender

Table 4.1 shows the entire number of respondents with respect to gender. This section of the data was included to enable respondents to indicate their gender since construction industry is known for its masculinity (Male Dominance).

Table 4.1: Gender

Gender	Frequency	Percent (%)	Cumulative Percent (%)
Female	11	9.3	9.3
Male	68	90.7	100
Total	75	100	

Source: Field Survey, 2018.

Respondents who completed this section is shown in Table 4.1. Out of the total respondents of Seventy-five (75), male recorded the highest number with a sum total number of sixty-eight (68) representing 90.7% and that of female was eleven (11) representing 9.3% of the entire

respondents. It can therefore be deduced that majority of the respondents were males thus throwing more emphasis on the male dominance as seen in a typical construction setting.

4.2.2 Level of Academic Qualification

Highest level of academic qualification of respondent were ask in the questionnaire. Professional Diploma, Bachelor's Degree, Master's Degree and Doctorate Degree as can be identified in Table 4.2 were the options given. As high as 48% of the total respondents were Master's Degree holders representing thirty- six (36) respondents, Bachelor's Degree holders had 49.3% representing thirty-seven (37) respondents has been the highest qualification of respondents. 2.7% out of the total number of respondents were Professional Diploma holders were two (2).

Table 4.2 Academic Qualification

Level of Education	Frequency	Percent (%)	Cumulative Percent (%)
Professional Diploma	2	2.7	2.7
Bachelor's Degree	37	49.3	52
Master's Degree	36	48	100
Doctorate Degree	0		
Total	75	100	

Source: Field Survey, 2018

4.2.3 Profession

Seen in this section are respondents' assessment based on their profession in their firms. Table 4.3 represents the profession of respondents in their firms. A larger percentage thus 34.7% were represented by Engineers who were 26 in number. Contractors were 22 thus 29.3% of the entire population. Architects represented 29.3% of the entire respondents totaling 22. Statutory bodies represented 5 respondents thus 6.7%.

Table 4.3: Profession

Profession	Frequency	Percent (%)	Cumulative Percent (%)
Contractors (D1K1,D2K2)	22	29.3	29.3
Designer/Architect	22	29.3	58.6
Engineers	26	34.7	93.3
Statutory bodies	5	6.7	100
Total	75	100	

Source: Field Survey, 2018

4.2.4 Years of Experience

Figure 4.2 shows that out of the total number thus seventy-two (75) which quantifies all the respondents, 86.7% which is the highest percentage representing sixty-five (65) respondents were 10 years over of current years of experience with the firm. Followed was 10.7% of the respondents representing eight (8) in number were found to be having working experience between 6-10 years as the second highest. 2 respondents representing 2.6 % had working experience of 0-5 years

Table 4.4 Years of experience

Position	Frequency	Percent (%)	Cumulative Percent (%)
0-5 years	2	2.6	2.6
6-10 years	8	10.7	13.3
Over 10 years	65	86.7	100
Total	75	100	

4.2.5 Structure of your Organization

In Table 4.4, respondents were asked to select which of the elements best suited the structure of their organization. Entirely project based represents firms that are fully projectized and only operate when projects are introduced to them by the stakeholder. Mainly project based have a blend of projectized and functional traits but are more project oriented. Firms which were entirely project based recorded a frequency of 4 respondents thus 5.3% of the entire population. Firms which are mainly project based recorded a frequency of 9, taking 12% of the responses. Partly project-based firms recorded a higher frequency of 32 having 42.7% with functional organizations recording the second a frequency of 30 having 40%.

Table 4.5: Structure of your organization

Organization Structure	Frequency	Percent (%)	Cumulative Percent (%)
Entirely Project based	4	5.3	5.3
Mainly Project based	9	12	17.3
Partly project based (project managers have partial authority)	32	42.7	60
Organization is not grouped by projects (functional organization)	30	40	100
Total	75	100	

4.2.6 Category of firm

Respondents were asked to describe which category of construction firm they fell within. Figure 4.3 shows clearly the contractor category of the respondents' firm. 62.7% of the respondents are in D1K1 firms thus representing 47 whilst 37.3% of the respondents are in D2K2 firms. A greater majority of registered construction firms in the Accra Metropolis can found within the category of D1K1. This implies that majority of the respondents who answered the questionnaire were affiliated to organizations in this category.

Table 4.6: category of firm

Level of Education	Frequency	Percent (%)	Cumulative Percent (%)
D1K1	47	62.7	62.7
D2K2	28	37.3	100
Total	75	100	

Source: Field Survey, 2018

4.2.7 Strength of staff

Respondents in the questionnaire were asked their strength of staff level. 0-5, 6-10, 11-15, 16-20, 21 and above shows in table 4.2 .As high as 77.3% of the total respondents were 58 fifty-eight respondents. 16-20 had 17.3% representing thirteen (13) respondents. 4% out of the total number of respondents were 3 representing 11-15. Respondent 6-10 is 1.3% representing 1 of the total respondent 11.11%.

Table 4.7: strength of staff

Strength of staff	Frequency	Percent (%)	Cumulative Percent (%)
0-5	0		
6-10	1	1.3	1.3
11-15	3	4	5.3
16-20	58	17.3	22.6
21 and above	58	77.3	100
Total	75	100	

Source: Field Survey, 2018

4.2.8 Sector of construction industry

In Table 4.4, respondents were asked to select which of the construction industry they belong. Entirely residential 22 of the respondent making 29.3%, commercial and institutional had 7 respondent making 9.3%, Industrial had 1 respondent making 1.4 % of the entire population. Civil and Transportation based recorded the highest frequency of 45 respondents thus 60% of the entire population.

Table 4.8: Sector of Construction industry

Sector of industry	Frequency	Percent (%)	Cumulative Percent (%)
Residential	22	29.3	29.3
Commercial and institutional	7	9.3	38.6
Industrial	1	1.4	40
Civil and Transportation	45	60	100
Total	75	100	

4.3 RESPONDENT LEVEL OF AWARENESS OF THE IMPACT OF STAKEHOLDER INTERFERENCE.

As part of this research's objectives was to determine the extent of effect of stakeholder interference on performance of contractors in project delivery in the construction industry and the general impact it makes in the Ghanaian construction industry. It sought to evaluate the construction industries' understanding of the concept of stakeholder interference, whether they recognize interference as a key issue, how they perceive interference, the factors, effect and the control measure deem in the construction industry. Results of the findings of these questions in the section have been analyzed below.

4.3.1 Awareness of stakeholder interference(SI)

Respondents were asked of their awareness of stakeholder interference (SI) in the construction industry. Figure 4.4 depicts the responses the respondents gave. Out of the total of 75 responses, 40 respondents were much aware of the existence of stakeholder interference issues in the construction industry which responded very important. Responded important were 30 respondent

less than (< 10) respondents were uninformed or had slight knowledge about the stakeholder interference. This implies that most of the respondents in the building and road construction industry thus D1K1 and D2K2 attest to the fact of stakeholder interference.

In the ensuing section, respondents who answered yes thus 64 in number were asked to rate their understanding of SI. Table 4.5 represents the results from the analysis. From the results, even though majority had heard about Stakeholder interference, 85.3% of the yes percentage had excellent understanding of SI and none of the respondents had a very poor understanding of SI

Table 4.9: Understanding of Stakeholder interference (SI)

Understanding of SI	Frequency	Percent (%)	Cumulative Percent (%)
Yes	64	85.3	85.3
No	2	2.7	88
Some how	9	12	100
Total	75	100	

Source: Field Survey, 2018

Table 4.10: Awareness of the stakeholder interference and knowledgeability of artisans

Awareness Variable	Inputs	Frequency	Percent (%)	Cumulative Percent (%)
Do people at all levels in your organization attest to stakeholder interference?	Yes	64	85.3	85.3
	No	2	2.7	88
	Somehow	9	12	100
	Total	75	100	
Are artisans (masons, carpenters, steel benders etc.) knowledgeable in the area of their works?	Yes	2	2.7	2.7
	No	3	4	6.7
	Somehow	70	93.3	100
	Total	75	100	

Table 4.6 represents the analyses of the data collected in this section thus awareness variables. To begin with respondents were asked whether people at all levels in their organization attest to the stakeholder interference as a key issue. 85.3% responded “Yes”, with 2.7% going for “No” and 12% going for “Somehow”. For 85.3% of the respondents to enter “Yes”, means that, stakeholder interference factors is known among the professionals in the construction industry also the knowledgeability of artisans in the construction industry, 93.3% responded somehow to their knowledge in the area of their work. 4% responded No and 2.7% representing 2 of the total responded said yes to their knowledge in the field of work.

4.4 STAKEHOLDER INTERFERENCE FACTORS ON PERFORMANCE OF CONTRACTORS

In order to explore the stakeholder interference on performance of contractors in the construction industry, twelve (12) factors were noted on the topic which was studied to come up with the most prominent factors. In all twelve (12) factors were noted. Respondents were asked to rank the twelve (12) factors according to their level of impact and familiarity through a survey. This was done on a Likert scale 1-5; **1= No impact**; **5 = Very high impact**

The purpose was to determine the dominant SI that could be improved to enhance improvement in the construction industry. Relative Importance Index for analysing the data collected from the field were adopted for the SI factors. The mean as well as RII scores of all the seventy-five (75) respondents were calculated for each factor and have been indicated on the Table 4.7 below.

Table 4.11 Factors of stakeholder interference

SI Factors	Frequency of Ranking					Total	ΣW	Mean	RII	Ranking
	1	2	3	4	5					
Inconsistencies and omissions in design	2	2	4	7	60	75	346	4.6133	0.9227	1st
Long waiting time for inspection and testing	4	4	2	1	64	75	342	4.5600	0.912	2nd
Inexperience contractors	3	5	2	1	64	75	343	4.5733	0.9147	3rd
Time performance	3	5	2	3	62	75	341	4.5467	0.9093	4th
Poor communication among project participants	3	5	2	3	62	75	341	4.5467	0.9093	4th
Poor planning and scheduling	4	4	2	6	59	75	337	4.4933	0.8987	6th
Poor project estimating	3	5	2	7	58	75	337	4.4933	0.8987	6th
Lack of proper supervision and inspection from architect	2	6	4	10	53	75	331	4.4133	0.8827	8th
Lack of skill labour and poor material usage	3	5	7	5	55	75	329	4.3867	0.8773	9th
Poor or lack of safety programs and site management	2	6	8	12	47	75	321	4.2800	0.8560	10th
Contractors failure to perform and poor construction method	5	3	16	5	46	75	309	4.120	0.824	11th
Lack of innovation in design/contractor input in design	8	1	32	20	14	75	256	3.4133	0.6827	12th

Questionnaire of this section were answered by all respondents. After the analysis, the results presented that the most popularly known SI factor within the construction industry is inconsistencies and omissions in design. Inconsistencies and omissions in design in the construction industry had the highest RII of 0.9227 which shows an extremely very high impact of the SI factor. The Likert scale used indicated that 5 = Very high impact. mean value for inconsistencies and omissions in design in the industry, the result acquired was 4.6133, meaning the mean value is strongly skewed to 5 signifying a strong familiarity and awareness of SI factor to what it can cause to the project?

Followed suit was long awaiting time for inspection and testing which was ranked 2nd. Long awaiting time for inspection and testing had an RII ranking of 0.912 with its mean value 4.560 which is also skewed to 4. Respondents were of the view that the urgency with which project are inspected and test for contractors to continue with their work would help in achieving deadline to prevent delay of projects. Inexperience contractors was ranked 3rd with a mean value of 4.5733 and an RII ranking of 0.9147. Contractors who are inexperience will affect the performance of the project and cause delay making deadline difficult to meet also resulting in poor work.

Poor communication among project participant, time performance, poor planning and scheduling, poor project estimating, lack of proper supervision and inspection, lack of skill labour and poor material usage, poor or lack of safety programmes and site management, contractor failure to perform and poor construction method, lack of innovation in design/contractor input in design, all deem useful and familiar with the respondents with RII ranking of 0.9093, 0.9093, 0.8987, 0.8987, 0.8827, 0.8773, 0.8560, 0.824, 0.6827 respectively. from the literature chapter 2 it can be seen that inconsistencies and omissions in design is actually a major factor which after the project and its delivery

4.5 RESPONDENTS VIEW ON THE EFFECTS OF STAKEHOLDER INTERFERENCE, IMPACT ON THE CONTRACTOR IN THE GHANAIAN CONSTRUCTION INDUSTRY.

The purpose was to determine the dominant SI effect that impact the performance of contractors in the Ghanaian Construction Industry consequences on the final project. In all six (6) effects were noted. Respondents were asked to rank the six (6) effect according to their level of impact through a survey. This was done on a Likert scale 1-5; **1 = very poor; 5 = excellent.**

Relative Importance Index (RII) for analysing the data collected from the field for the SI . The mean as well as RII scores of all the seven-five (75) respondents were calculated for each factor and have been indicated on the table below.

Table 4.12 Effect on Performance

No .	EFFECT ON PERFORMANCE	Frequency of Ranking					Total	$\sum W$	Mean	RII	Ranking
		1	2	3	4	5					
1	Time overrun	9	8	10	21	27	75	274	3.6533	0.7307	1st
2	Cost (budget) overrun	9	12	10	13	31	75	270	3.600	0.720	2nd
3	Litigation	9	6	20	15	25	75	266	3.5467	0.7093	3rd
4	Disputes and claims	8	9	23	20	15	75	250	3.333	0.6667	4th
5	Total abandonment	8	19	15	13	20	75	243	3.240	0.648	5th
6	Poor quality of completed works	6	25	25	10	9	75	216	2.830	0.576	6th

Questionnaire of this section were answered by all respondents. After the analysis, the results depict that most effect is time overrun which has a negative impact in the delivery of the project, respondent rank it the highest RII of 0.7307 which shows an extremely very high impact of the SI effect. The Likert scale used indicated that 5 = Very high impact. The mean, the result acquired was 3.6533, meaning the mean value is strongly skewed to 4 signifying a strong SI effect? Followed suit was cost (budget) overrun which was ranked 2nd had an RII ranking of 0.7093 with its mean value 3.5467 which is also skewed to 4. Respondents were of the view that the unresolved payment and claims by stakeholder always result in litigation. Dispute and claims, total abandonment and poor quality of completed work were rank 4th, 5th, and 6th respectively with RII of 0.6667, 0.648, and 0.576

4.6 RESPONDENTS VIEW ON THE CONTROL MEASURE OF STAKEHOLDER INTERFERECE IN THE GHANAIAI CONSTRUCTION INDUSTRY.

In order to explore measures to control the effect of stakeholder interference on performance of contractors in the construction industry, fourteen (14) control measures were noted. The purpose was to determine the dominant control measure of SI that could be improved to enhance construction industry. Relative Importance Index for analysing the data collected from the field were adopted for the SI control measure. The mean as well as RII scores of all the seventy-five (75) respondents were calculated for each control measure and have been indicated on the Table 4.14 below. Respondents were asked to rank the fourteen (14) control measures according to their level of impact and familiarity through a survey. This was done on a Likert scale 1-5;

1=disagree; 5 = strongly agree

Table 4.13 Control Measures

Control measure	Frequency of Ranking					Total	ΣW	Mean	RII	Ranking
	1	2	3	4	5					
Free flow of relevant information in the construction period	2	1	5	9	58	75	345	4.60	0.92	1st
Stakeholders must be identified early in the construction period	1	2	10	15	47	75	330	4.400	0.8800	2nd
Post designs and drawings project reviews before final handling to contactor to begin work	2	1	17	19	36	75	311	4.167	0.8293	3rd
Enhanced communication practices	1	2	16	15	41	75	318	4.240	0.8480	4th
Collaborative technologies in the use of building information model (BIM) among professionals for the designing process.	1	5	15	20	36	75	308	4.107	0.8213	5th
Resolving negative community reactions to the project, develop and sustain relationships with affected communities throughout the project lifecycle.	3	1	15	23	33	75	307	4.093	0.8187	6 th

Stakeholder interference must be adequately addressed through the development teams	2	2	16	25	30	75	304	4.053	0.8107	7th
Clear strategy for resolving claims, all cases and issues against stakeholder must be resolved as quickly as possible	2	1	21	20	31	75	302	4.027	0.8053	8th
Early resolution to changes in scope of work.	2	1	19	25	28	75	301	4.01	0.8027	9th
Architect must visit site regularly for inspection and testing must be approved early	3	3	17	23	29	75	297	3.96	0.792	10th
Lessons learnt database	1	2	25	19	28	75	296	3.947	0.7893	11th
Employee stimulation and motivation	3	3	20	19	30	75	295	3.933	0.7867	12th
Exploring innovative approaches and promoting adequate resources assigned to the project.	2	3	21	24	25	75	292	3.893	0.7787	13th
Favorable news about the project in the press	3	4	22	19	27	75	288	3.84	0.768	14th

Questionnaire of this section were answered by all respondents. After the analysis, the results presented that the most control measure to be adopted for SI within the construction industry is free flow of relevant information in the construction industry. Free flow of relevant information in the construction industry had the highest RII of 0.92 which shows an extremely very high control measure of the SI. The Likert scale used indicated that 5 = Very high impact. Mean value for free flow of relevant information in the construction industry, the result acquired was 4.60, meaning the mean value is strongly skewed to 5 signifying a strong measure that can enhance the quick delivery of the project to meet its deadline.

Followed suit was stakeholder must be identified early in the construction period which was ranked 2nd. Stakeholder must be identified early in the construction period had an RII ranking of 0.88 with its mean value 4.4 which is also skewed to 4. Respondents were of the view that the

urgency with which stakeholder must be identified at the beginning of the project will improve project delivery. Enhance communication practices was ranked 3rd with a mean value of 4.240 and an RII ranking of 0.8480. Enhance communication practices in the project will improved stakeholder and contractors relationships, since all are interested in schedule delivery of the work.

Post designs and drawings project reviews before final handling to contractor to begin work, Collaborative technologies in the use of building information model (BIM) among professionals for the designing process, Resolving negative community reactions to the project, develop and sustain relationships with affected communities throughout the project lifecycle, Clear strategy for resolving claims, all cases and issues against stakeholder must be resolved as quickly as possible, Early resolution to changes in scope of work , Architect must visit site regularly for inspection and testing must be approved early , Lessons learnt database, Employee stimulation and motivation, Exploring innovative approaches and promoting adequate resources assigned to the project, Favorable news about the project in the press, all deem useful in control measure for stakeholder interference with RII ranking of

0.8293,0.8213,0.8187,0.8107,0.8053,0.8027,0.792,0.7893,0.7867,0.7787,0.768 respectively.

Respondents are of the view that the way a contractor is procured also as an interference level. From the data collected 44% representing 33 of respondents said contractors are procured by restricted tendering, 33.3% representing 25 of the respondents are of the view that some contractors are procured by single source tendering, 21.3% representing 16 of the respondents are procured by two stage tendering, 1.3% representing only 1 of the respondent said contractors are procured by national competitive tendering likewise 1.4% representing 1 of the respondent are of the view that contract are awarded by word of mouth.

Respondents are asked a follow up question to buttress the earlier question, from the data collected whether contractors enter into any written agreement with stakeholders before contract are being given to them 65.3% representing 49 of the respondents are of the view that is not often. From the beginning, they are made to start the work before the necessary written documents are made, 26.7% made up of 20 of the respondents are of the view that often before work start all contractual written agreement are made before work begins, 8% of respondents made up of 6 of the respondent are of the view that written agreement are made for work starts.

Respondents were asked through the questionnaire that are artisans (masons, carpenters, steel benders etc.) are they knowledgeable in the area of their works 93.3% made up of 70 respondents said somehow since there is shortage of them in the area of their works as discussed in the literature review, 4% representing 3 of the respondents says no and 2.7% of 2 said yes. The knowledgeability of these artisans has a direct impact on the project which also brings about stakeholder interference.

The data collected in terms of their training shows a high percentage 93.3% that they are acquired without going through any formal training which affects the quality of works they undertaken in terms of specialized works making the stakeholder interfere on the performance of the contractor. Only 6.7% undergo training sessions to give them new methods of working on the project.

The data which was collected from the respondents shows that, the motivation is one aspect in which artisans can work on the project to prevent stakeholder interference on the performance of contractors, as seen in the literature review, when artisans are motivated they give their best to even work of extra time, to see the project delivery on time and in budget. 93.3% of the respondents made up of 70 of the respondent affirms that with motivation in the project delivery.

The deadline for the project can be met as the literature also confirms it. Only 6.7% representing 5 of the respondent says no, without motivation they can work.

Data collected from the research shows that advance mobilization has an impact on stakeholder interference. The analyzed data depict 39 of the respondent choosing most positively using the Likert scale of **1-5, very positively to most positively** and 23 respondent saying not at all

Respondents were asked if advanced mobilization affects their work, the data collected and analyzed shows that advanced mobilization affects the delivery of project since getting money from the banks is difficult for contractors and stakeholders expect the contractor to perform lack of that will make the stakeholder interfere in their works since time is of an essence in the delivery of the work. From the analyses 96% of respondents representing 72 say advanced mobilization affects stakeholder interference, 2.7 % representing 2 of the respondent said often and 1.3% representing only 1 of the respondent says not often.

Data collected and analyzed from respondents shows that the most prominent control measure of stakeholder interference is free flow of relevant information in the construction period.

DATA ANALYSIS

Table 4.13 below shows the data collected from the respondents to test for the hypothesis of the factors of stakeholder interference using Chi-Square Test.

Table 4.14 Factors of stakeholder interference (SI)

SI Factors	total					
Inconsistencies and omissions in design	2	2	4	7	60	75
Lack of innovation in design/contractor input in design	8	1	32	20	14	75
Contractors failure to perform and poor construction method	5	3	16	5	46	75
Poor planning and scheduling	4	4	2	6	59	75
Poor project estimating	3	5	2	7	58	75
Poor or lack of safety programs and site management	2	6	8	12	47	75
Poor communication among project participants	3	5	2	3	62	75
Lack of proper supervision and inspection from architect	2	6	4	10	53	75
Long waiting time for inspection and testing	4	4	2	1	64	75
Lack of skill labour and poor material usage	3	5	7	5	55	75
Time performance	3	5	2	3	62	75
Inexperience contractors	3	5	2	1	64	75
Total	42	51	83	80	644	900

The hypothesis is

Ho: There is no association between stakeholder interference factors and the performance of contractors.

H1: There is association between stakeholder interference factors and the performance of contractors .

In testing the hypothesis 5% level of significance was adopted, the rule for acceptance is accept if Ho if p-value <0.05. Accept H1 if p>0.05

The results of the Chi Square tests (X^2) =228.21 from the table below. The degree of freedom (df) = (no. of columns- one) *(no. of rows –one) =44 that; critical value is 60.48 therefore there

is enough evidence to accept the H1 hypothesis which says there is association between stakeholder interference factors and the performance of contractors. This further indicates that, there is stakeholder interference in all construction project.

$$X^2 = 228.21, \quad \text{Critical value} = 60.48, \quad X^2 = 228.21, \quad P < 0.05,$$

Degree of freedom (df) = no. of columns – one * (no. of rows – one)

$$= (5-1) - (12-1)$$

$$= 4 * 11$$

$$= 44$$

$$X^2 > \text{Critical}$$

$$228.81 > 60.48$$

The table below show the computation of the Chi-square test.

OBSERVED (O)						
	2	2	4	7	60	75
	8	1	32	20	14	75
	5	3	16	5	46	75
	4	4	2	6	59	75
	3	5	2	7	58	75
	2	6	8	12	47	75
	3	5	2	3	62	75
	2	6	4	10	53	75
	4	4	2	1	64	75
	3	5	7	5	55	75
	3	5	2	3	62	75
	3	5	2	1	64	75
TOTAL	42	51	83	80	644	900

**EXPECTED
(E)**

3.5	4.25	6.91666667	6.66666667	53.6666667	75
3.5	4.25	6.91666667	6.66666667	53.6666667	75
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3.5	4.25	6.91666667	6.66666667	53.6666667	75
3.5	4.25	6.91666667	6.6		

O-E

-1.5	-2.25	-2.91666667	0.33333333	6.33333333
4.5	-3.25	25.08333333	13.33333333	-39.6666667
1.5	-1.25	9.08333333	-1.66666667	-7.6666667
0.5	-0.25	-4.91666667	-0.66666667	5.3333333
-0.5	0.75	-4.91666667	0.33333333	4.3333333
-1.5	1.75	1.08333333	5.33333333	-6.6666667
-0.5	0.75	-4.91666667	-3.66666667	8.3333333
-1.5	1.75	-2.91666667	3.33333333	-0.6666667
0.5	-0.25	-4.91666667	-5.66666667	10.3333333
-0.5	0.75	0.08333333	-1.66666667	1.3333333
-0.5	0.75	-4.91666667	-3.66666667	8.3333333
-0.5	0.75	-4.91666667	-5.66666667	10.3333333

(O-E)^2

2.25	5.0625	8.50694444	0.11111111	40.1111111
20.25	10.5625	629.1736109	177.7777777	1573.444447
2.25	1.5625	82.50694438	2.77777778	58.77777829
0.25	0.0625	24.17361114	0.44444444	28.44444409
0.25	0.5625	24.17361114	0.11111110	18.77777749
2.25	3.0625	1.173611104	28.44444441	44.44444489
0.25	0.5625	24.17361114	13.44444447	69.44444389
2.25	3.0625	8.506944464	11.11111109	0.444444489

0.25	0.0625	24.17361114	32.11111115	106.7777771
0.25	0.5625	0.006944444	2.777777789	1.777777689
0.25	0.5625	24.17361114	13.44444447	69.44444389
0.25	0.5625	24.17361114	32.11111115	106.7777771

(O-E)^2/E					
0.642857	1.191176	1.229921897	0.016666325	0.747403677	3.828026
5.785714	2.485294	90.96485937	26.66666664	29.31884061	155.2214
0.642857	0.367647	11.92871484	0.416666668	1.095238104	14.45112
0.071429	0.014706	3.494979923	0.066666667	0.530020697	4.177802
0.071429	0.132353	3.494979923	0.016666666	0.349896475	4.065325
0.642857	0.720588	0.169678714	4.266666659	0.828157358	6.627948
0.071429	0.132353	3.494979923	2.016666669	1.293995848	7.009424
0.642857	0.720588	1.229919681	1.666666663	0.008281574	4.268313
0.071429	0.014706	3.494979923	4.816666667	1.989648019	10.38743
0.071429	0.132353	0.001004016	0.416666668	0.033126292	0.654578
0.071429	0.132353	3.494979923	2.016666669	1.293995848	7.009424
0.071429	0.132353	3.494979923	4.816666667	1.989648019	10.50508
TOTAL	8.857143	6.176471	126.4939781	47.19999964	39.47825252
					228.2058

OBSERVED	EXPECTED	O-E	(O-E)^2	O-E)^2/E
2	3.5	-1.5	2.25	0.642857
8	3.5	4.5	20.25	5.785714
5	3.5	1.5	2.25	0.642857
4	3.5	0.5	0.25	0.071429
3	3.5	-0.5	0.25	0.071429
2	3.5	-1.5	2.25	0.642857
3	3.5	-0.5	0.25	0.071429
2	3.5	-1.5	2.25	0.642857
4	3.5	0.5	0.25	0.071429
3	3.5	-0.5	0.25	0.071429
3	3.5	-0.5	0.25	0.071429
3	3.5	-0.5	0.25	0.071429
2	4.25	-2.25	5.0625	1.191176
1	4.25	-3.25	10.5625	2.485294
3	4.25	-1.25	1.5625	0.367647
4	4.25	-0.25	0.0625	0.014706

5	4.25	0.75	0.5625	0.132353
6	4.25	1.75	3.0625	0.720588
5	4.25	0.75	0.5625	0.132353
6	4.25	1.75	3.0625	0.720588
4	4.25	-0.25	0.0625	0.014706
5	4.25	0.75	0.5625	0.132353
5	4.25	0.75	0.5625	0.132353
5	4.25	0.75	0.5625	0.132353
4	6.91667	-2.91667	8.506964	1.229922
32	6.91667	25.08333	629.1736	90.96486
16	6.91667	9.083333	82.50694	11.92871
2	6.91667	-4.91667	24.17361	3.49498
2	6.91667	-4.91667	24.17361	3.49498
8	6.91667	1.083333	1.173611	0.169679
2	6.91667	-4.91667	24.17361	3.49498
4	6.91667	-2.91667	8.506944	1.22992
2	6.91667	-4.91667	24.17361	3.49498
7	6.91667	0.083333	0.006944	0.001004
2	6.91667	-4.91667	24.17361	3.49498
2	6.91667	-4.91667	24.17361	3.49498
7	6.66667	0.33333	0.111109	0.016666
20	6.66667	13.33333	177.7778	26.66667
5	6.66667	-1.66667	2.777778	0.416667
6	6.66667	-0.66667	0.444444	0.066667
7	6.66667	0.333333	0.111111	0.016667
12	6.66667	5.333333	28.44444	4.266667
3	6.66667	-3.66667	13.44444	2.016667
10	6.66667	3.333333	11.11111	1.666667
1	6.66667	-5.66667	32.11111	4.816667
5	6.66667	-1.66667	2.777778	0.416667
3	6.66667	-3.66667	13.44444	2.016667
1	6.66667	-5.66667	32.11111	4.816667
60	53.6667	6.3333	40.11069	0.747404
14	53.6667	-39.6667	1573.444	29.31884
46	53.6667	-7.66667	58.77778	1.095238
59	53.6667	5.333333	28.44444	0.530021
58	53.6667	4.333333	18.77778	0.349896
47	53.6667	-6.66667	44.44444	0.828157

62	53.6667	8.333333	69.44444	1.293996
53	53.6667	-0.66667	0.444444	0.008282
64	53.6667	10.33333	106.7778	1.989648
55	53.6667	1.333333	1.777778	0.033126
62	53.6667	8.333333	69.44444	1.293996
64	53.6667	10.33333	106.7778	1.989648

**chi-
square 228.2058**

Chi-square critical value $p=0.05, df=44$

60.48089

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The aim of the study is to help bring to the fore effect of stakeholder interference on contractors performance in project delivery in the construction industry. Looking at Ghanaian construction Industry (GBI) as into details, towards appreciating the effect on contractors' performance. Objectives questions were ask for improvement and to achieve this aim which were being led by research questions were set. The questions and the objectives of the research are reconsidered in this chapter, throughout the various stages of the study the aim has been considered which was brought to light in this chapter. Recommendations of the researcher based on the findings of this chapter was presented, Chapter five followed the format below:

- Review of the research objectives;
- Summary of findings;
- Contribution to knowledge and industry;
- Recommendations;
- Recommendation for future research;
- Limitations of the study;
- Implication for the research and its findings for construction practice and academia
- Conclusion

5.2 REVIEW OF THE RESEARCH OBJECTIVES

As covered in chapter I of 1.3 earlier of this thesis, the whole aim of the research is to examine the effect of stakeholder interference on performance of contractors in project delivery. 3 objectives were recognized in order to accomplish the aim. The accomplishment of each objective is presented in the subsequent subsections.

5.2.1 First Objective

The primary objective focuses on determining the stakeholder interference factors on performance of contractors during project delivery to get deeper understanding of the situation. This objective has been achieved by undertaking an extensive review on stakeholder interference in the construction industry in Ghana and other developing countries (**see chapter 2**). The literature revealed various factors interfering in the delivery of the project in Ghana.

5.2.2 Second Objective

The second objective of the research was to determine the effect of stakeholder interference on the performance of contractors during project delivery in construction industry. In achieving the second objective, construction site were visited within Accra metropolitan area, contractors (D1KI and D2K2) statutory bodies to ascertain the impact of the interference in the industry.

5.2.3 Third Objective

The objective three was to explore measure that control the effect of the stakeholder interference on performance of contractors during project delivery. The chapter 4 spoke about the measure of control.

5.5 SUMMARY OF FINDINGS

Demographic data

- A sum total of eighty-two (86) questionnaires were administered and seventy-five (75) responses were retrieved from Contractors (D1K1,D2K2), statutory bodies, Designer/Architects and Engineers all from registered and operational D1K1 and D2K2 construction firms in Accra Metropolitan area indicating a high response rate of 87.21%.
- From chapter 4, 48% of the total respondents were Master's Degree holders representing thirty-six (36) respondents. Bachelor's Degree holders as high as 49.3% representing thirty-seven (37) respondents. 2.7% out of the total number of respondents were Professional Diploma holders were two (2). No respondent came from the background of Doctorate Degree.
- From Table 4.3 in chapter four, a larger percentage thus 34.7% were represented by Engineers who were 26 in number. Designer/Architect and Contractors D1K1, D2K2) both had the same respondent 22 thus 29.3% of the entire population. Statutory bodies represented 5 respondents thus 6.7%.
- From Figure 4.2, 86.7% which is the highest percentage representing eighty-seven (87) respondents were within the over 10 years of current working experience with their various firms. Followed was 10.7% of the respondents representing eight (8) in number were found to be having working experience between 6-10 years as the second highest. 2 respondents representing 2.6% had working experience 0-5years;
- With regard to the Contractor classification, Figure 4.3 shows clearly that 62.7% of the respondents are in D1K1 firms thus representing 47 whilst 37.3% of the respondents are in D2K2 firms. A greater majority of registered construction firms in the Accra

Metropolis can found within the category of D1K1. This implies that majority of the respondents who answered the questionnaire were affiliated to organizations in this category;

- Out of the total of 75 responses, 64 respondents representing 85.3% were much aware of the issues of stakeholder interference in the construction industry. Responded “No” were only 2 respondents representing 2.7% and somehow were 9 representing 12% of respondents. This implies that most of the respondents in the building construction industry thus D1K1 and D2K2 are aware of the issues of stakeholder interference and its associated problems it has on the construction industry;

To determine the stakeholder interference factors on performance of contractors during project delivery

- After the analysis from Table 4.7 thus stakeholder interference factors, the results showed that the most popularly known factor within the construction industry is inconsistencies and omissions in design with the highest RII of 0.9227 which depict an extremely strong SI factor. The Likert scale used indicated that 5 = Very well known. Looking at the mean value the result acquired was 4.6133, meaning the mean value is strongly skewed to 5 signifying a strong awareness of this factor; which also shows from the literature review that inconsistencies and omissions in design is a major stakeholder interference factor which needs to be paid attention to.
- With regards to the determine stakeholder interference factors in the Ghanaian construction industry, eleven (11) variables were identified. The analysis revealed that

inconsistencies and omissions in design in the Ghanaian construction industry with a mean and RII values of 4.6133 and 0.9227 respectively.

Finally objectives 1 and 2 were achieved by the data collected and analysed in chapter 4, from the respondents which shows that inconsistencies and omissions in design and time overrun are the major factors, factors that impact the construction work as shown below in table 14 and 15 respectively below

To determine the effect of stakeholder interference on the performance of contractors during project delivery

From the analysis in **Chapter 4**, it shows that time overrun, cost(budget) overrun, Litigation are the factors which impact the project delivery in the construction industry. It can be seen that from the analysis of the results of data collected from the respondents shows that time overrun is the most impact factor and was ranked 1st with an RII of 0.7307 mean score ranking of 3.6533 as the highest ranked factor of impact to the construction industry, which is followed suit by cost(budget) overrun as the 2nd impact factor with RII of 0.720 and mean score ranking of 3.60, the 3rd impact factor is Litigation which affects the project outcome if issues are not addressed as spoken of in the literature review with its RII of 0.7093 and mean of 3.5467.

To explore measures that control the effect of stakeholder interference on the performance of contractors during project delivery.

From the analysis of the control measure in **Chapter 4** it can be seen that free flow of relevant information in the construction period was ranked as the 1st control measure with RII of 0.92 with its mean of 4.6 skew to 5 meaning respondent strongly agree to that control measure this

was followed by stakeholders must be identified early in the construction period with its RII of 0.88 and mean value of 4.4 which is skewed to 4 which shows that respondent much agree to the control measure and was ranked as the second much agree control measure factor , Post designs and drawings project reviews before final handling to contractor to begin work was ranked the 3rd control measure factor, Enhanced communication practices was ranked the 4th control measure.

5.3 CONTRIBUTION TO KNOWLEDGE IN THE GHANAIAI CONTEXT

This study has contributed to both knowledge and industry in diverse ways. These are outlined below:

This research has unearthed the level of awareness of stakeholder interference as seen in the construction industry as well as some of the interference issues in the construction industry; and

- The research has brought to light the various stakeholder interference in the Ghanaian construction industry based on which proposed strategies/recommendations have been given for adoption.

5.5 RECOMMENDATION

Based on the study findings, the researcher derived the following recommendations to help alleviate the effect of stakeholder interference on performance of contractors in project delivery in the construction industry, the Ghanaian construction industry:

- Contractors must engage stakeholder early before the inception of the project to avoid interference;
- Changes in design details must be done before contractors take possession of site.

- The professionals (Engineers, Designer/Architect, contractors, statutory bodies) within the built and road environment need to be fully acquainted with stakeholder interference issues through Continuous Professional Development (CPD) such as; seminars, refresher courses and workshops; and also the use of Building information model (BIM) to resolved designs.
- Workers of contractors must be well experience in the area of chosen field to deliver project in time.

5.6 RECOMMENDATION FOR FUTURE RESEARCH

For future research, these outlined recommendations have been proposed;

- The relationship between performance criteria and Stakeholder interference in the Ghanaian construction industry; and
- The challenges inhibiting the successful implementation of project due to stakeholder interference among D3K3 and D4K4 construction firms.

5.7 RESEARCH LIMITATIONS

Although the project managed to achieve its objectives, some limitations were noted as:

- Due to the strict confidentiality attached to their database, gaining data on the population (ABCECG) was difficult. However, the research provided assurance that such information was required for academic purpose and will be used with utmost confidentiality;

- Due to busy schedules of some participant in attempt to answer questionnaire because of the time nature, made data collection extremely difficult.

5.8 IMPLICATION OF THE RESEARCH AND ITS FINDINGS FOR CONSTRUCTION PRACTICE AND ACADEMIA.

It can be seen from the research that there is stakeholder interference on contractors' performance which affect the delivery of the project either by extension of time or cost (budget) or both on the project. Therefore in construction practice professional that is engineers, architect/designers etc. must be forthcoming from the initiation of the project to its completion, seminars, training workshops must be organized for them to abreast them with modern trends of addressing the issues with the latest technology. In terms of academia students who are offering engineering courses must be made aware of interferences in construction projects through lectures notes and the lecturers during teachings , how to address those issues when they arise and also made to undertake internships to be abreast with these issues.

5.9 CONCLUSION

In conclusion the construction sector of every country affect the development of its economy which provides jobs, fixed asset for the people in the country. The life of its citizen are improved due to the infrastructure development and also improve the economy but this is affected by stakeholder interference on performance of contractors to undertake this duty and makes project delivery an issue. Based on this, the study effect of stakeholder interference on performance of contractors in construction project delivery was undertaken to find out the factors, effects and control measure to improve and enhance the construction industry for quick delivery of project

on time and within budget to prevent time overrun. It can be observed from the aim, objectives of this thesis that all the objectives were achieved through the data collected and by purposive sampling from professionals and statutory bodies which made of seventy-five as the population size chosen with a sample size of forty-three. Data collected from respondents and analysed confirmed what the literature says. Inconstitencies and omissions in design is the most paramount factor ranked with RII of 0.9227, mean score of 4.6133 which is skew to 5 which shows that it has a high impact on the project if not dealt with and Time overrun with RII 0.7307, mean score 3.6533 skew to 4 shows that if stakeholder interference is not check it will make time for the project to be extend. The study revealed that, inconsistencies and omissions in design is the most paramount factor which affected the project delivery due to designs and drawings not been completed before contractors takes possession of the site. Secondly, assumption made by the study was that there is an association between stakeholder interference factors and the performance of contractors in all construction project. Thirdly, the control measure which was ranked by respondents shows that Free flow of relevant information in the construction period, Stakeholders must be identified early, Post designs and drawings project reviews before final handling to contactor to begin work, Enhanced communication practices are the 1st, 2nd, 3rd and 4th respectively ranked control measure to in curb stakeholder interference on performance of contractors for project delivery in the construction industry. It is therefore recommended that adequate construction budget, timely issuing of information, finalization of design and project management skills should be the main focus of the parties in project procurement process.

If these are held to and practiced in the Ghanaian construction industry project delivery will be improved tremendously.

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Dear sir/madam,

I am student of Kwame Nkrumah University of science and technology in my final year pursuing MSc. Project Management carrying out a research on EFFECT OF STAKEHOLDER INTRFERENCE ON PERFORMANCE OF CONTRACTORS IN PROJECT DELIVERY IN THE CONSTRUTION INDUSTRY.

It would be much appreciated if you could spare some time to complete this questionnaire for me.this questionnaire is a tool for collecting data for academic purpose and will not be used for any other reason. Answer provided by you will be treated with utmost confidentiality.

Thank you

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APPENDIX: RESEARCH QUESTIONNAIRE

Any information provided will be treated with utmost confidentiality as the questionnaire is solely for academic purpose.

Please circle the appropriate alphabet in response to the questions and appropriately write the necessary response or comment when necessary.

SECTION A, DEMOGRAPHY DATA

1. Please indicate your profession:

- a. Contractor
- b. Designer/Architect
- c. Engineer
- d. Statutory bodies

2. Indicate your gender?

- a. Male
- b. female

3. Please indicate your years of experience:

- a. 0 – 5 years
- b. 6 – 10 years
- c. Over 10 years

4. Level of education

- a. professional diploma
- b. bachelor's degree
- C. PDG/master degree
- d. Doctorate degree

5. Please indicate the strength of your staff?

- a. 1-5
- b. 6-10
- c. 11-15

- d. 16-20
- e. 21 and above

5. What contractor category best describes your firm?

- a. D1K1 ()
- b. D2K2 ()

7. indicate the structure of your organization?

- a. Entirely Project based ()
- b. Mainly Project based ()
- c. Partly project based (project managers have partial authority) ()
- d. Organization is not grouped by projects (functional organization) ()

4. Indicate your sector of the construction industry

- a. Residential
- b. Commercial and institutional
- c. Industrial
- d. Civil and Transportation

9. Please rate the following on a scale of 0 – 5 where 0 = unimportant and 5 = very important

	Unimportant	Slightly important	Moderately important	Important	Very important
What is the effect of stakeholder interference to the overall project delivery?					

SECTION B, FACTORS AFFECTING STAKEHOLDER INTERFERENCE

10. Please rank the following factors of interference in terms of their impact on the construction projects.

Factors of interference	No impact	Low impact	Moderate impact	High impact	Very high impact
Inconsistencies and omission in design					
Lack of innovation in design/contractor input in design					
Contractors' failure to perform and poor construction method					
Poor planning and scheduling					
Poor project estimating					
Poor or lack of safety programs and site management					
Poor communication among project participants					
Lack of proper supervision and inspection from architects Long waiting time for inspection and testing					
Lack of skilled labor and poor material usage					
Time performance					
Inexperienced contractors					

SECTION C, EFFECT OF STAKEHOLDER INTERFERENCE ON PROJECT DELIVERY

11. Rank the following contractors' artisans (masons, carpenters, steel benders.) experience. From a scale of 1-5. 1. experience - 5. Most experience

Contractors artisans	experience	not experience	Less experience	More experience	Most experience
masons					
carpenters					
Steel benders					

12. Do people at all levels in your firm attest to the stakeholder interference consequences?

- a. Yes () b. No () c. Somehow ()

13.. Who is your major stakeholder?

- Government of Ghana
- Private corporate organization
- Private individuals
- Other.....

14. How will you rate these effect on performance in the construction industry? From 1-Very

Poor to 5-Excellent

No.	Effect on Performance	Rating				
		1	2	3	4	5
1	Cost(budget overrun)					
2	Time overrun					
3	Poor quality of completed projects					
4	Disputes and claims					
5	Litigation					
6.	Total abandonment					

15. Rank on a scale of 1-5 1.strongly disagree 5.strongly agree

	Strongly disagree	Disagree	undecided	agree	Strongly agree
Does stakeholder interference impact contractor project delivery?					

SECTION D: CONTROL EFFECTS OF STAKEHOLDER INTERFERENCE

16. How are you procured as contractor?

- a. National competitive tendering
- b. International competitive tendering
- c. Two stage tendering
- d. Restricted tendering
- e. single sourcing
- f. word of mouth.

17. Do you enter into any written agreement with the stakeholder?

- a. Very often
- b. Often
- c. Not often
- d. Not at all

18. Are artisans (masons, carpenters, steel benders etc.) are they knowledgeable in the area of their works

- a. Yes
- b. No

19. Are there training sections for the artisans before or during the project?

- a. Yes
- b. No

20. Is there any form of motivation for artisans during project delivery?

- a. Yes
- b. No

21. Did you receive mobilization advance from stakeholder?

- a. very often
- b. Often
- c. Not often
- d. Not at all

22. Rank on a scale of 1-5. How does advance mobilization affect your work?

1. Very positively 2. Positively 3. Not quite 4. Not at all 5. Most positively

	1	2	3	4	5
How does advance mobilization affect your work?					

23. Please rank the following control measures of stakeholder interference in terms of their control on the construction projects

Control Measure	Disagree	Strongly disagree	Agree	Much agree	Strongly agree
Collaborative technologies in the use of building information model (BIM) among professionals for the designing process.					
Lessons learnt database					
Stakeholders must be identified early in the construction period					
Stakeholders must be identified early in the construction period					
Enhanced communication practices					
Stakeholder interference must be adequately addressed through the development teams					

Free flow of relevant information in the construction period					
Post designs and drawings project reviews before final handling to contactor to begin work					
Exploring innovative approaches and promoting adequate resources assigned to the project.					
Resolving negative community reactions to the project, develop and sustain relationships with affected communities throughout the project lifecycle.					
Employee stimulation and motivation					
Clear strategy for resolving claims, all cases and issues against stakeholder must be resolved as quickly as possible					
Favorable news about the project in the press					
Early resolution to changes in scope of work					
Architect must visit site regularly for inspection and testing must be approved early					

24. From experience, what would you recommend as the measure of control of stakeholder do to reduce the interference on contractors' performance in project delivery?

- a. design must be review and accepted before construction start by both parties
- b. payment of claims and time schedule must be agreed by both parties.

Order

THANK YOU