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Studies on Exploring the Potential Innovations in Contractor Insurance Options in the Construction Industry in Ghana.

By

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MASTER OF SCIENCE

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DECLARATION

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

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ABSTRACT

The construction industry (CI) worldwide involves many forms of activities that exposes it products, professional, services providers and consumers in the industry to many forms of risk and uncertainties in various dimensions. Contractors are not of sound mind when carrying out construction project because of the uncertainty and risk associated with it. This study presents critical examination of contractor insurance options available to the contractor and determines potential innovations in insurance delivery and means of adopting the options in the CI of Ghana. The study was based on a mixed method research methodology and covers construction and contractor insurance options, means of adopting an innovation method of contractor insurance option in order to ascertain the nature and typology contractor insurance options in the CI of Ghana. Data was collected in a questionnaire survey of 60 stakeholders in the CI and insurance companies across the Ashanti region of Ghana representing 76.92 percent (%) as the response rate. Descriptive statistical analyses were used toanalyse the research questions. Proposed findings cover better ways of creating awareness of risk and uncertainties involved in successful completion of construction projects and the need to involve them as contractor to contactor insurance when contracts are awarded. The study shows that, creating awareness of risk and uncertainties associated with contractor insurance is to fully protect construction worker as a core responsibility for every contractor. The study also shows that, the most influencing factors affecting the selection of contractor insurance are the insurance companies' parameter and the determinants of contractor insurance options respectively. There is also evidence of "Contractor Insurance options and innovation is key to the development of the insurance industry" as the most potential innovations insurance option that influence the selection of contractor insurance option in the CI.

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ABBREVIATIONS

ABCECG : Association of Building and Civil Engineering Contractors of Ghana

CI : Construction Industry

GCI : Ghanaian Construction Industry

RII : Relative Importance Index

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DEDICATION

This dissertation is dedicated to the Almighty God.

CHAPTER ONE

GENERAL INTRODUCTION TO THE RESEARCH

1.1 BACKGROUND OF THE STUDY

The CI worldwide involves many forms of activities that exposes it products, professional, services providers and consumers in the industry to many forms of risk and uncertainties in various dimensions. Risk is the likelihood, chances or possibility of occurrence of a danger to a construction activity or injury to a construction professional, worker, service provider, equipment among others (Ringen, *et al*., 1995). Uncertainty in the context of construction is the likelihood of unfortunate and unforeseen incidents to occur. This may occur as a result from any form of accidents including vehicle accidents, injuries from workplaces and diseases which may lead to permanent or partial incapacitation (Green, 1997; Loosemore, *et al.*, 2006). Risks in the industry have received tremendous attention whereas the subject of uncertainty in construction activities has not been given the necessary attention in term of research. The two concepts are all likelihood events since their occurrence are not known until they happen. Although risk can be measured and predicted, uncertainty is difficult and sometime not even thought of many in the industry.

The nature of construction works exposes almost all the factors of construction products and production to various kinds of risks including the use of scaffolds, chemicals and toxics that are harmful to human health and the effects of natural disasters such as flood, fire outbreak, earthquake among others as well as poor workmanship(Wisner, 2012). In order to reduce the devastating consequences of any of such risks and uncertainties, construction companies (CC), clients, consultants have devised conventional ways that cushioned them and other third parties to the contract against the results of such unfortunate occurrences. One of such

conventional means is the institutionalization of an insurance cover, which depending on the aspect of the construction process is determined as very critical in insuring.

Contractor insurance is a means by which there is an exchange of a party prerogative over an amount which is fixed in order to protect another party/parties' interest in relation to a particular construction project (O'Sullivan, 2016). According to Rapp, (2011) and Edwards (1995), contractor insurance in itself is a major innovative way of managing risks for contractors, clients and other related parties associated with the project. It provides party funding in time of the occurrences of any risk and uncertainty to the insurers. Contractor insurance acts in a more and more important in ensuring project success and as with underwriters transferring gains and losses that result through sudden happenings as well as natural disasters (Akbıyıklı, et al., 2011).

Despite the above, risk and uncertainty mitigation mechanism in the CI has little been known in both practice and in literature about the utilization and the potential innovations in the options available to contractors in the Ghanaian Construction Industry (GCI). The subject of contractor insurances does times does not receive the necessary attention it deserves due to some various factors. Notably among these factors could be as a result of the lack of understanding of the industry on the importance of insurance; lack of legal framework within which stakeholders can operate; stakeholders, particularly in the context of Ghana lacks the understanding as to how to allocate risk and the methods used in managing risk through insurance.

In the CI, insurance is limited to a section of its staff, thus living the rest and the works to their providence. The CI is one of the largest employment provider's in

Ghana. According to Cotton *et al.* (2005), the construction industry is among the most hazardous industries with records of high occurrence of accidents that cause deaths, injuries, financial losses etc. This indicates that instead of managing the risk for maximum protection and increase in profit margins, CI is doing otherwise.

According to Lloyd (2014), globally, contractors normally have risk indemnity policies covering almost every aspect of their projects as it is the most profitable for them to maintain this indemnity. Once insurance is made to cover all aspects of the construction project, the risks involved in the process is consequently passed to the owner. Even though defects in the project are normally not included in the insurance policy; wording could be purchased instead to cover damages caused by the defects to the works of the project. For such insurance to be significant, different aspects of the works ought to be precisely defined. Construction insurance is only available when construction works is going on in accordance with sound established techniques of construction.

1.2 PROBLEM STATEMENT

The provision of contractor insurance is in general measured very important and indeed in the occurrence of major harm or losses, the insurance is the only means of ensuring that the project is back on track (Badu, 2012).

According to Liu *et al.* (2004), the characteristic nature of construction projects renders it the riskiest among other project activities. Risk is naturally found in every human activity, but different risk elements are involved that keep changing from time to time. Building activities usually involves controlling and arranging activities as well as resources, risk management planning for the purpose of reducing the effect of uncertain occurrences. Risk associated with construction has drawn the attention or

time due to the time and cost over-run that comes with construction projects (Odeyinka, 2004).

The contractor shall subject to all conditions and terms on the insurance policy to carry out the project to completion and also shall comply with the Contract Documents by engaging the right materials and workmanship. According to Turner (1979), should there be any defect in the works of construction which the contractor ought to have included in the contingency sum or the work item rate calculation, it is demanded from the contractor to make it better at his own cost (Odeyinka, 2000) cited Turner (1979).

Contractors are not of sound mind when carrying out construction project because of the uncertainty and risk associated with it. Having insurance on construction project will fully protects a contractor and provides him or her with peace of mind during the construction project to the end. Although, the research seeks to critically examine contractor insurance options and to determine potential innovations in insurance delivery in the CI of Ghana, it equally ascertain the nature and typology contractor insurance options in the GCI. To this end, the research is structured to determine the contractor insurance option available to the contractor and means of adopting an innovation method of contractor insurance option to the CI.

1.3 AIM AND OBJECTIVES OF THE RESEARCH

1.3.1 Research Aim

The aim is to examine contractor insurance options and determine potential innovations in insurance delivery in the CI of Ghana.

1.3.2 Research Objectives

In an attempt to achieving the research aim, these specific objectives were set:

1) To ascertain the nature and typology of contractor insurance options in the CI in Ghana;
2) To identify the underpinning determinants of contractor insurance option selection in Ghana; and
3) To explore potential innovations in contractor insurance options in the GCI.

1.4 RESEARCH QUESTIONS

1) What is the nature and typology of contractor insurance option in the CI in Ghana?
2) What determinants underpin contractor insurance option selection in Ghana?
3) What potential innovations can be adopted in contractor insurance option in the GCI?

1.5 SIGNIFICANCE OF THE STUDY

Construction insurance is essential for the completion of a successful construction project to both parties involved. With contractor insurance, the risk that would be transferred to only the contractor will now be split and some will be transferred to the other parties on board. The study is to enhance awareness creation on risk and uncertainties involve in construction and the need to involve them as contractor to contactor insurance when contracts are awarded to them. The findings of this study also provide innovation ways or methods of making contractor insurance more accessible and also influence contractors to adapt to contractor insurance as and when they have project(s) or contract(s) to execute.

Insurance is one method or means of managing with risk that are associated with construction projects. This study will seek to identify the nature and types of contractor insurance in the CI of Ghana and innovations that can be introduce to enhance contractor insurance.

1.6 METHODOLOGY

The research methodology involves the systemic rules and procedures upon which this research agenda is based and against which the data collected is interpreted and the findings evaluated. An appropriate thoughtful position was adopted to help in addressing the key research questions. An extensive literature review was conducted to help provide a thorough understanding of potential innovation contractor insurance. The review was supported by in-depth exploratory interviews to verify the strategic issues identified in the literature. Ideas were explored in new areas which might not have been given expanded view in literature. A quantitative research strategy was adopted to obtain the relevant data from the research participants. Subsequently, a self-administered structured survey questionnaire was conducted to collect primary data from the field. The results obtained from the literature review and the in-depth interviews provided the framework and the basis for the development of the questionnaire.

1.7 SCOPE OF THE RESEARCH

Stakeholders in the CI and insurance companies in Ashanti region were selected. Stakeholders including contractors, clients, consultants and insurance companies were engaged as they formed the backbone in examining contractor insurance options as well as determining potential innovations in insurance delivery in the CI of Ghana. The option of Ashanti region as a geographical location was due to the fact

that, it is one of the largest industrial cities in Ghana where construction projects take place.

1.8 THESIS ORGANIZATION

The research's design is structured into five interconnected chapters and it does follow this outline. The chapter one introduces the study as it outlines the study's background with the inclusion of the research aim and objectives, problem statement, research question, and scope of the research. The chapter two reviews pertinent literature connected to the research; thus, a brief conceptual framework is set to critically examine contractor insurance options and to determine potential innovations in insurance delivery in the construction industry in Ghana. Chapter three elucidates the methodology chosen. This tackled sample size determination, research philosophy, sampling techniques, sample population, statistical tools, and questionnaire design and administration. The chapter four is the results and discussion of data gathered. The chapter five being the last chapter the study wraps up the whole research as it reviews the foremost contributions of the study to the body of knowledge.

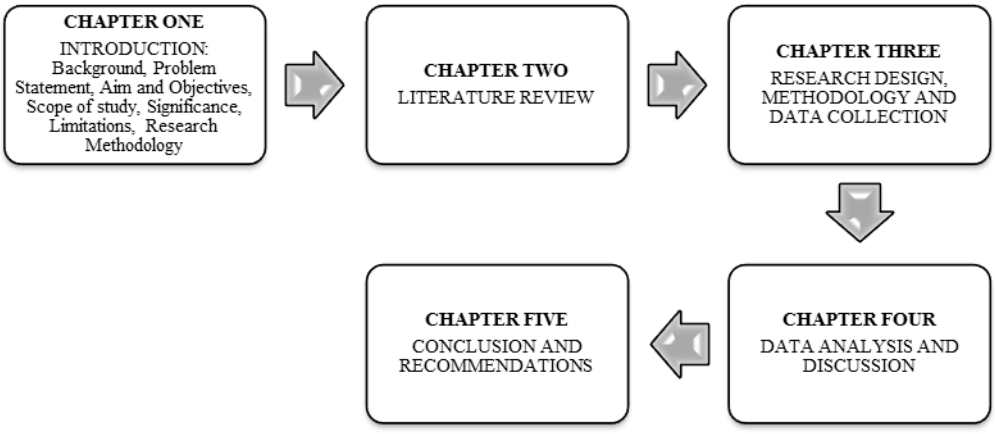

Figure 1.1 Summary of workflow of the study

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter starts with a detailed conceptual explanation on CI industry in Ghana; critically examines contractor insurance options, risks related to construction, and determines potential innovations in insurance delivery in the CI of Ghana. Furthermore, it also examines the types of insurance policies within the industry, factors that affect the contractor insurance option and the innovation ways to improve the contractor insurance option.

2.1 CONSTRUCTION INDUSTRY IN GHANA

According to Ahmed (2014), Ghana in the Sub-Saharan region of Africa is rapidly advancing as its construction industry faces the challenge of meeting the demand for housing as well as industrial and commercial space whiles protecting the social well-being and the physical environment of the country at the same. The CI in Ghana is an important sector that contributes enormously to the growth of the economy as it produces buildings that support goods production in the economy (Ofori, 2012).

The CI in Ghana is one of the industries in the country that has a higher risk associated with it. The industry which is under taken by the client and contractor, the clients most a times employs the services of consultants to take charge and monitor the project at a fee from the client. In recent years, project developers and contractors in the CI are making effort toward the encouragement of insurance in the CI. The quality control of human, plant, and materials resource had been rampantly considered in the CI. Risk in various constructions is a major problem which all other business faces. Risk cannot be eliminated completely. In addition, insurance offers

protection against losses from risk, but not all risk. The basic probability is that if an occurring risk can be estimated, then the likely losses resulting from it can be spread over all equipment which is to insure against the losses.

According to Han and Ofori (2001), construction has been presupposed to be the main supportive industry to the recovery of the Ghanaian economy. The local as well as the central governments that develop CIs and as well drive economic growth have undertaken certain programs and policies. In China for instance, the definition for construction is an industrial sector of the economy for production of material which generates constructions and other related structures, and as well fixes the needed equipment. The Ghanaian CI has faced a number of changes precisely in the last five decades, which reflects dominant economic and political settings.

2.1.1 Concept of Construction

Construction has been discussed by Cox and Thompson (1997) to be an 'integrally project activities that are site-specific'. On this idea, Shirazi *et al.* (1996) concluded that construction constitutes the co-ordination of specified and distinguished tasks at site. The importance or the idea of site activities gives us two basic descriptions to house construction. The first idea or importance aims at each specific project, whereby financial control as well as decision making is based on the individual. The predominant organization measures which when left between authority and responsibility emphasis is to be laid on the efficiency of each project, and retort to the course of the complication identified above. The robust confidence in restricted decision-making is better clarified by the fact that 'management is unacquainted with local environment and resources'. The second idea or importance focuses on the need for the adjustment at construction site. The adjustment is important to owing to the remaining ambiguous factors, that is, lack of standardization, erratic environment and

lack of comprehensive specification. When these three factors start to rule the game it becomes very hard in developing systems and components designed for the situation at the individual sites. Consequently, it is uncommon for manufacturers of building materials to develop products that best suit some construction sites or particular contractors. The CI still depends on what is called ‘standardized parts’ as Stinchcombe (1959) identified, whereas the use of ‘standardized activities’ turns out to be common among other industries. The dominant indecision renders ‘standardized parts’ a fitting approach which strengthened by the benefits gained as a result of up surging economies of scale in the industry of the manufacturers. Again, the complication in relation to interdependencies appears to be supporting standardization and as a result local modifications. The ‘overlay of phases’ and ‘inflexibility of systems’ sequentially renders difficulty in co-ordination. It is often probable and so then; such conditions are catered for through local adjustments and decentralization rather than tailored solutions and unified undertakings (Dubois and Gadde, 2002).

Other features of construction firms’ behaviour needs to be observed. Strong emphasis laid on discrete construction projects favour both scope and time. Productivity is thought to be stimulated by competitive tendering. Cox and Thompson (1997) establish the viewpoint of the various actors to be that competitive; tendering assures that contracting is done at the lowermost possible cost. The robust dependence on competitive tendering defines the engagement of ‘standardized parts’. Customization as well as adaptations would exclude the likelihood of engaging the procedures of tendering. The final aspect of the CI in relation to the behaviour of the industry is the various responsibilities of companies. The scope of activity appears to be broad, including distribution and production of

the various combinations, designs, which could vary among dissimilar construction projects.

2.2 CONTRACTOR INSURANCE

The contractor insurance service and products are small or inadequate, and little insurance firms can be good advisers to the management of risking Ghana. Contractor insurance remains novel to the local market. Insurance firms regard it as a means of chance to increase their profit margin but they do not have enough understanding which leads to unpredictability. Furthermore, there two means or method of calculating premium. Underwriters cannot transfer risks to global additional coverage market as a result of their low percentages. Insurers then ought to consider taken all other risks, which becomes expensive for them (Hawke, 2003).

The second has a high priced premium to the underwriters by insurers due to the fact that, they are mindful of the method as well as the lack of record regarding to the insurance for construction works. The underwriters do not know or have an approved fitting rate of premium for risks in construction. Subsequently, insurers charge more than necessary to cover the risks so as to warrant cost-effectiveness. Safety and quality challenges as well as delay in payment demand China's CI to engage the practice of risk management. Ghana's CI has frequently been alleged to have short-range objectives with stress on higher profit margins. Lack of investing in technology, people, and processes is affecting the construction industry. Ghana's construction supervisors had small in-depth acquaintance or understanding in managing risk.

2.3 RISKS RELATED TO CONSTRUCTION

According to (Hwang *et al.*, 2014; Zavadskas *et al*., 2010; Liaudanskienė *et al.*, 2010), risk may be defined as been opened to loss over profit or the possibility of incidence of loss over profit multiplied by risk's corresponding level. If the occurrence is said to be certain then the probability of it happening is 100%and if it is not occurring then the probability is 0%. Separating these excesses, the improbability varies rather extensively. Nowadays, a lot of information can be used to assess risk. Construction activity is associated with a lot of risk as other economic activities are also exposed to risk. Paslawski (2013) also said, successes and implementation in CI depends on the level of risk.

Nevertheless, construction projects are known to have more inbuilt risks because of the number of people that are involved in the contract or contracting, like contractors, clients, suppliers, designers and subcontractors (PMI, 2004).According to Akintoye and MacLeod (1997), risk is found in every social activity, which includes the activities inside construction and the risk components involved varied. The nature of construction undertakings moves to risk management in the controlling, arranging and planning resources and activities so as to lessen the effect of unreliable activities. Cost and time over-runs linked to projects of construction are risk in construction because it has been the object of consideration. Perry and Hayes (1985), Healey (1982) and McKim (1992)defined risk to be an acquaintance to economic gain or loss through the participation in the process of construction; due to this Mason(1973), see risk to be an exposure to just loss. McKim (1992) stated that, it is important to know the risk's nature before any idea of managing it can follow. Risks come in various categories and most a times the type of risk be contingent of the condition.

Toakley and Ling (1991); Williams and Heims (1989); Raftery (1994); and Akintoye and Macleod (1997) identified the contemporary procedure or techniques for managing risk in the construction industry. They include discount rate, risk adjusted, decision analysis, sensitivity analysis, subjective probability, risk premium. However, a study carried out by Odeyinka (1987) identified that an ideal way or method of managing risks in the CI is by a means of transferring it to the insurance companies.

2.3.1 Risk Management

Risk has some effect on the performance of a project which can either be negative or positive. So the management of risk has become the means or method for the CI. Nevertheless, the method of managing risk has remained unchanged. Technology, process and people are the main components concerning risk management(Liu et al. 2003). Ineffective as well as inappropriate management of risks has brought low, the return of GCI. According to Liu *et al.* (2003) except operative mechanism is engaged to stop the decreasing movement and to enhance risk management quality in Ghana, the condition will get worse. The management of risk can be among the most innovative way or method for managing project (Smith, 1999). Liu *et al.* (2003) stated that, the dissimilarity between successful, unsuccessful and unachievable projects is certainly more difficult as compared to the management of risk; but it appears to be that should the track record of successful projects be engaged, then it can be concluded that the successful projects has improved tremendously as more firms introduce risk to be an unified part of the management system of the project (Smith, 1999). In Ghana, the engagement of risk management has been successfully for many industries like the stock market and insurance. Risk management can assist CIto transfer, absorb and reduce risk and thus achieve possible prospects.

2.3.2 Types of Construction Risks

The construction industry has a bad record in terms of risk issues as the inherent nature of the industry poses it so. Parties of the construction industry have therefore suffered from a number of unbearable outcomes in a form of delays in project delivery, with upshot of cost exceeding budgets and even sometimes projects failing to meet the required quality and operations. Risks involved in construction are mostly regarded to be events that affect the objectives of projects in terms of quality, cost and time. A number of risks that are involved in the process of construction are readily identifiable or can fairly be predicted; others though cannot be totally seen. The following are some risks that may cause delays or even increase the cost of the project to the contractor (Edwards, 1995).

2.3.3 Benefit of Risk Management

The management of risk in the industry of construction is not just about telling what will happen in the future, but understanding a way a project is and taking renowned idea or decision towards the management of that project tomorrow (Smith, 1999). According to Liu *et al.*(2003) in terms of project management, the most dangerous side of risk can be briefed as: failing to reach the anticipated operational desires and quality; failing to keep within the estimated cost; and failing to achieve success before the completion date. The management of risk can assist parties to do away with or alleviate these short-comings. The advantages involved in managing risks can also be summarized as: issues related with projects are easily identified; having understanding of the project even from the start and taken certain actions into consideration; management decisions get the support through analysis; project's definition and structure are controlled and monitored constantly; thorough

understanding of the various kinds of risks associated with the activities of the project; and an enhanced project management communication and experience.

2.4 TYPES OF INSURANCE WITHIN THE CONSTRUCTION INDUSTRY

The insurance company underwrites various kinds of uncertainties in our life and the society at large that can be brought under two broad terms, general and life insurance. Life insurance defines a contract which mostly involved the individual and the insurance firm in a condition where the individual consented to make payment of premium and in a return the firm does similar by agreeing to pay certain amount to the death of underwriter or on the expiration of a fixed time. Life insurance deals with mental or physical accident of the insurer whiles the general insurance deals with all insurance with the exception life insurance.

2.4.1 Life Insurance

Life is unsure. Human beings die any time whether old or young, leaving people behind that depend on him or her without enough pecuniary supports. Consequently, life insurance becomes a key in overcoming such problems. Life insurance is an insurance done to secure the future of the family of the insurer through the means of render strength to the family to pursue their well-off prospect. It is not only about the death of the insurer but likewise in situations when he or she has severe illness or has retired from work (Jyotsna and Nishwan, 2007).

Mostly, life insurance becomes the insurance type that the insurer planned to conduct which is unswervingly linked with making provision for assurance against the most often part among the lives of humans. This is not the same as assurance of life, it is not possible. Nevertheless, life insurance assures and tries in meeting the economic

aspects of the life of humans. It makes provision for future advantages against hidden future coincidence.

2.4.2 Non-Life Insurance

The non-life insurance normally called the 'general insurance' includes any insurance with the exception of life insurance. The nature of this kind of insurance deals with measuring all kinds of risk in monetary terms. The general insurance is the indemnity for assets and it is liable risk of insured against most specified cost that is premium. It as well includes liability insurance, property insurance and other insurance types.

As stated by Kalinin (2012), general insurance includes the indemnity and transfer of risk of the asset and liability of indemnified whereas property indemnity against loss that arises for the client or user of property entails two broad categories. The first category insures the indemnified in situation of loss developing from damage to total destruction of asset of the insured. The second category pays compensations, where the indemnified is lawfully predisposed, the result of careless acts that causes injuries to different persons or causes loss to their assets. This is referred to as "liability insurance". Common insurance type is planned conferring to the needs of the customer and it is suitable to cover all kind events in the future. General insurance will boost private and commercial subdivisions to take risk and still be positive in the future.

2.4.3 Marine Insurance

Marine insurance forms the oldest type of indemnity that root from maritime and Greek loan. This type of insurance is designed to insure the damage or loss caused through goods transportation from loading to unloading points of the goods. Marine

insurance is an important insurance for shipping companies and industry because it gives protection against damage or loss by danger of the sea and mostly through transit hazards. Actually, it provides the needed insurance covering all kind of assurance in the time of a particular voyage including manmade and natural disasters. Modern marine insurance insures protection to counter inland transportation loss caused on the way to seller and buyer.

2.4.4 Workers Compensation

Workers compensation is a form of insurance whereby an employee who is injured in the course of employment is compensated in the means of wage and medical benefit, and also in the case of death, benefits will be transfer to the dependent of the person who dead in a work-related accident.

2.4.5 Performance Bond

In construction industry a ‘performance bond ‘is a bond carried out by the contractor, it is either with a bank or the insurance company (in a return of a premium), for the profit of and which are normally requested by the employer, in a set maximum sum of liability and implemented by the employer in the situation whereby the contractor default. According to Martin (2003), a performance bond is a bond giving protection for the carrying out of a contract, where a bond is a deed by which one person (contractor) commits himself to another (employer) or cease from doing something. The bond must be submitted to the employer before the works can be executed.

Performance bonds are of two types, conditional bond or default bond and unconditional bond or on-demand bond (Robinson et al., 1996). The conditional or default bond is a contract of guarantee in which the security accepts ‘joint and several’ responsibility for the performance of the contractor’s obligations under the

building contract, the contractor remains primarily responsible for his performance and not protected or secure by the bond.

According to Supardi *et al.* (2009), the unconditional or on-demand bond is a covenant by the surety (normally a bank) to indemnify the employer following contractor's default, the focus is on the stated terms and up to a sum which can be between 10 and 20% of the main contract sum. The arrangements exclude the contractor as a party to the contract.

2.4.6 Property Insurance

Property insurance is a policy financial repayment to the owner or renter of a building and its contents, in the situation of thief or damage. The following are examples of property insurance: homeowners insurance, renters insurance, flood insurance and earthquake insurance (Mills, 2003)

2.4.7 Commercial Property Insurance

This is a type of insurance that is use to protect any commercial property. It is use to protects commercial property from dangers such as fire, theft and natural disaster. It is a type of insurance that is carried out by a variety of businesses, which includes manufacturers, retailers, service-oriented business and not-for-profit organizations (Stempel, 2005).

2.5 PRINCIPLES OF INSURANCE

There are some basic principles underlying insurance. The most important of these principles are as listed and explained below.

2.5.1 Insurable Interest

Insurable interest implies that, the insured must have legal or equitable interest in the property or subject-matter of the insurance as long as it exists. Insurable interest is the value or importance one attaches to the subject-matter of insurance(Jerry and Richmond, 2012). For example, everybody has insurable interest in his life and will do everything possible to preserve it from premature and avoidable death, injury, sickness or any form of mishap by taking out a life insurance policy. A typical illustration of insurable interest is this; If a business man who has insured his factory against fire, deliberately set fire to it so that he can claim compensation, he is presumed to have no insurable interest in it. In this case, the insurance contract will be void in law. That is, the contract will have no legal effect.

2.5.2 Indemnity

The principle of indemnity requires that, the insured is placed in the same position as he was in before the loss occurred. Indemnity ensures that, one does not make profit out of the insurance policy (Fischer, 1980). For example, if a person has insured his property for the value of ten (10) million against fire, and the property actually catches fire, the insured is to be indemnified to the value of ten (10) million. This however depends on the terms of the insurance contract that was sign.

2.5.3 Professional Indemnity

Professional insurance is one the common type of insurance that contractors normally purchase as a number of clients prefer to be purchased so as to have some level of cover. Professional insurance provide the cost of claims against the client, with the inclusion of damages that may be allocated(Jerry and Richmond, 2012). Claims can set in mostly in situations where the client undergoes a pecuniary loss consequently by a supposed faults or oversights on the client’s part. The client may

even be prosecuted by a party who is simply disgruntled, but possess a lawful prerogative, causing considerable lawful costs and time.

2.5.4Office Insurance

This package makes provision for the most all-inclusive cover one can purchase online. It can be designed to suit ones business needs (Harris and Katz, 1991).

2.5.5 Contractors All Risks Insurance

This insurance policy is designed specifically for constructors as well as other trade that engages in activities at a contract site. Policies under the contractors all risks insurance predominantly covers the construction itself for every single risks on site. They may as well include extra cover for employee's tools, own plant, hired-in plant, as well as public and proprietors liability indemnity. Contractors All Risks Insurance Quote Form, as aforementioned, the foremost part of this is the contract activities phase which offer cover for new materials and property value that are being engaged on site for works (example, new house, office etc.). Nevertheless, in cases where there exists a property, indemnity cover for the property already existing is debarred and thus ought to be insured by the property owner so cover it with insurance. Contractors All Risk Insurance are normally agreed to be on yearly basis by the contractor, nevertheless, the policies can be arranged over just a contract grounds either by the employer or the contractor of the project (Loots and Henchie, 2007).

- **Contractors All Risks Trades Covered**

Distinctive treaty trades for suppliers of All Risk indemnity cover will normally be air conditions or heating engineers, plastering or partitioning or dry lining and floor and wall tiling contractors installers, property developers, building contractors, double glazing, bricklayers, ceiling or a texing, electricians, carpenters or joiners,

shop fitters etc. Contractors All Risks insurance policy is made up of three (3) basic divisions of cover:

i. Employers' Liability Insurance
ii. Public Liability Insurance
iii. Contract Works

The section of contract works makes provision cover for the property as well as the materials being worked on; the public liability provide cover for one's legal liability for the property of a third party damage and/or physical injury; and the employers' liability insures the physical injury of workers (Bunni, 2003).

Again this policy provide cover that can be limited for contractors who are desiring to indemnify for new construction extension and renovation works, general jobbing works only or work (Liu et al, 2003).

- **Contractors All Risks Insurance - Properties Undergoing Renovation/Extension**

For properties undergoing renovation and extensions such as houses and more, only the alterations are covered under the contract works, not the existing structure. Therefore, the existing structure should still continue to be insured under the existing buildings insurance policy and the contract works would normally cover the newly renovated or extended portion of the building. A common misconception by homeowners is that their existing property insurer will automatically provide cover whilst an extension is being built, but this is not necessarily the case and should always be referred to the existing property insurer. If the existing buildings insurer is unable to cover the existing structure, some specialist insurers should be able to offer

cover and you should speak to an insurance broker such as us for assistance with this (Congreve, 2003).

- **What does the 'All Risks' refer to?**

The 'All Risks' element refers to the cover under the contract works section of the policy. In insurance terminology this means that the policy will cover any loss or damage to the property and/or materials other than certain specific exclusions. These specifically excluded covers generally include the existing structure, errors or omissions in design, penalties, and damage to external structures not part of the contract, and defective property (Bunni, 2003).

- **Contract Works**

The contract works includes both the permanent works including unfixed materials and the temporary works on site anywhere in the UK including transit by road, rail and inland, waterway, and while in the course of construction until handed over by the contractor to the principal or employer on practical completion. The permanent works are the main subject matter of the contract, for example the house, shop, factory that is being built. Permanent works will also include all unfixed materials, such as copper pipes or Upvc windows delivered on site for incorporation into the contract works either on the contract site or on the premises of suppliers and sub-contractors. The temporary works are site installations which are not part of the project, but are required to facilitate its building. Examples include site huts, access roads, scaffolding and the rest (Bunni, 2003).

- **Plant Cover**

If required, both own plant and hired-in-plant can be insured as part of the contract works subject to a separate sum insured being supplied for each section of cover.

Own plant can include cement mixers, excavators, generators, scaffolding, access towers, and plant storage containers. Plant can be expensive. So many construction companies hire in certain items of plant, and especially where this is only used occasionally for certain contracts. Typical items hired in by a contractor could include dumpers, tracked excavators, mobile cranes, tower cranes and more. In order to calculate the insurance cost for hired-in-plant, the contractor would advise the total maximum value of the plant and the insurers would charge a premium based on estimated annual hire charges paid out by the contractor (Bennett, 2004).

2.6 FACTORS THAT AFFECT CONTRACTOR INSURANCE OPTION

Contractor insurance can be affected when risk management and risk planning are not put in place to control the system. Adopting risk management as part of the management philosophy is contingent on the individuals in charge of performing, developing and maintaining management procedures and guidelines in a firm that is the supervisors themselves. As a result, a number of companies profit from having inventive supervisors who hearten the management of risk, but a lot undergo supervision, which opposed to management. However, disappointment in undertaking management of risk is increasing viewed to be unacceptable.

Risk analysis, when also performed, will help in the controlling of accident and injuries on site thereby affecting the duration period for completion of the project and also the cash flow of the contractor carrying out the works (Edwards and Bowen, 2013).

2.7 DETERMINANTS OF CONTRACTOR INSURANCE OPTION SELECTION IN GHANA

The insurance subdivision has been engrossed in a perpetual modernizing process, encouraging the required changes to acclimatize the novel commercial environments and to the emergent safety levels, effectiveness and transparency which are progressively being required by citizens as well as pecuniary markets (Wani & Dar 2015). Their increasingly regular hesitation essentially results companies and supervisors to seek higher safety levels via new methods to risk management procedures, supervision, and solvency. The effect would be reduced to zero and the Capital management will be enhanced. Finally, integral risk management ought to be part of the culture of the company, being integrated into learning, party policy guides etc., and its application ought to be encouraged internally. Essential risk management proposals important expansion prospects for the indemnity firm's procedures. By modeling processes, one can obtain, in an artless way, a comprehensive depiction of the company and those expanses of the company having risks on which one ought to focus for the purpose of minimizing worldwide exposure (Andersen, 2005).

In most developed countries a contractor undertakes certain roles as well as legal duties to the entire construction project, project team, client and other direct and indirect parties. CC has a financial responsibility to their client for errors in building to specifications even though claims in contrast to contractors in such circumstance are quite uncommon, claims do occur and they can be precisely high. The significant factors to take into consideration by a CC in going in for an insurance cover include the following:

- Owners have a lawful alternative to claim for inaccuracies or carelessness by the CC

- In a number of cases, an organization contract with an insurance company may not completely exonerate or protect the contractor
- The preponderance of clients lawfully necessitate contractors to possess professional indemnity insurance (PII) which can assists the contractor autonomous prestige

It can be argue that having insurance on a construction project will fully protects a contractor and provides him or her with peace of mind.

The CI is an industry which has a lot of factors that can affect the successful completion of the project or construction in question. This factors can cause a lot of problem which at long last will affect both parties involved (the client and the contractor). To avoid these factors from coming on both the contractor and the client which will at last affect the completion of the project the contractor insurance is the means that can be used to transfer those risks which may come up during the construction process and that will release both parties (Thompson and Perry, 1992).

To protect construction workers, to avoid delays in completing projects, to avoid abandoning of projects, to provide job security for the contractor, accident caused by force majeure, to fulfill regulatory requirement, to meet contractual obligation, to secure the work against disaster, to secure third parties not part of the contract and among other factors are the determinant factors that will call for the introduction of contractor insurance within the CI (Uhlig, 2012).

2.8 INNOVATIVE WAYS TO IMPROVE CONTRACTOR INSURANCE OPTION

In every sector there should be the introduction of new methods or ways of carrying out activities to make it lovely and attractive to customers that the organization offer services to. The insurance companies are not exception, innovations needs to be introduce within this companies to attract contractors to undertake contractor insurance whenever they have works to do or not. The "newness" aspect of an innovation may be expressed in terms of knowledge, persuasion, or a decision to adopt (Rogers, 2003).

Systematic review shows that the types of innovations in the private and public sector are quite similar. The typology proposed by Landry et al.'s builds on the work of Hartley (2005), Garcia Goni (2005), and Halverson *et al*.(2005). The various types which are not mutually exclusive include the follow: product innovation, service innovation, delivery innovations, process innovations, administrative and organisational innovations, conception innovations, regulatory and legal innovations, marketing innovations and system interaction innovations (Landry *et al*. 2007).

Diverse insurance products: thus there should be new construction insurance endorsements and polices that will bring all contractors on board to always patronizing contractor insurance as a major activity within their organization. Diverse processes in dealing with customers: new kinds of deal management with contractors and other customers.

Marketing strategy adopted: implementation of group discounts for social networks to contractors. Thus using modern medium to announce products to customers with some discount of the prices of the various products for contractors and other

customers to patronize. Organisational structure: creation of a new department in your organisation.

System interaction: new association for direct insurance writers in Ghana.

Delivery strategy innovations: accessing online claims service

Conceptual insurance innovations: “innovationsm construct” insurance product.

Regulatory and legal innovation: changing regulations in the insurance industry.

Economic and social innovation: variations in premium charge due to social relationship with a client.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The research methodology adopted for this research is espoused in this chapter. The research strategy, approach, process are explained. The research population, sample and sampling techniques are discussed. Instruments of data collection and analytical methods are as well dealt within this chapter. These methods will be used to bring to bear the need for innovation contractor insurance options in the construction industry.

3.2 RESEACH STRATEGY

The enquiry of research objective is simply the research strategy as Naoum (2002) define. There are three (3) main types of research strategy according to Naoum (2002) asserted. They are qualitative, quantitative and triangulation. However, the one to employ in any exact research practically relies on the intent of the study, type, as well as the availability of information for the study (Naoum, 2002). In effect, the study utilizes the quantitative and qualitative research methods. According to Frechtling and Sharp (1997) questionnaire, tests and present database is the common data collection technique used in quantitative research technique. Further, hard and reliable information are often collected in qualitative research, whereas quantification is emphasized. The representation of the sample collected is normally large. Thus the outcome under quantitative research can be generalized to a larger population within an acceptable error limits. The reliability of the results is grounded on careful choice measuring instrument and how correctly it measures targets (Patton, 2002).

3.3 RESEACH DESIGN

Research design is explained as the plan or outline that serves as a guideline in the gathering and explanation of data (Al-Moghany, 2006). It refers to the series of steps that connect research questions and collected data. Research design is the plan guiding the investigator to gather, analyze and explain observations (Nachmias and Nachmias, 1992). It involves a clear process of evidence permitting researcher to make inferences about causal relations of variables under study (Nachmias and Nachmias, 1992).

Research design is defined by Al-Moghany (2006) as an outline that explains what data are important, what questions to investigate, which data to be gathered and how data will be analyzed. Research design provides answers to questions under study (Polit and Hungler, 1999; Al-Moghany, 2006). It also mitigates challenges encountered when undertaking research (Naoum, 1998). It is impossible for researchers to assume people reason in a certain way without confirming from them (Polit and Hungler, 1999; Al-Moghany, 2006). According to Polit and Hungler (1999), research design explains the method to be utilized as well as how the investigator hopes to device controls to improve the interpretation of outcomes.

There are varying research designs that are used to meet the challenges anticipated in the review schedule (Weisberg and Bowen, 1977). As opined by Naoum (1998), the most used technique in data collection to gather opinions, facts and views of people is using structured questionnaire. A questionnaire survey design was employed in this survey.

3.4 DATA COLLECTION AND INSTRUMENTATION

3.4.1 Questionnaire Design

The questionnaires were devised to deal with the aim, objective and research questions of the research (Oppenheim, 1996). A good questionnaire is made up of questions which generate varying kinds of data from the respondents (Gall *et al*., 2003). Questionnaires should be brief, and questions set in a simple way (Gall *et al*., 2003).

The design of an effectual questionnaire survey is dependent on four essential factors: wording of question, classification, variables coding and general acceptance (Sarantakos, 2005). The instruments for survey must first clearly define the focus of the research. It must translate the objectives to measureable features which add to the research focus (Salant and Dillman, 1994). A good question is one that generates responses which are valid and reliable (Fowler and Floyd, 1995). Survey questions must employ words which match the levels of education of respondents (McIntyre, 1999). Fowler and Floyd (1995) implied that the question and response options should be clear to the respondent and the investigator. Wording must avoid ambiguous understandings (Salant and Dillman, 1994; Fowler and Floyd, 1995).

Tourangeau (2004), questionnaire should be designed to include information which make the survey significant and relevant to the population to be sampled, whereby maximizing response rates and reducing error occurrence. Questionnaire should be designed to have the following sections normally in it:

1. Request for Cooperation: - this might be a brief introductory paragraph (or speech) at the beginning or could be a comprehensive cover letter. It should highlight the reason for the survey, voluntary participation, confidentiality, and willingness to provide a copy of results to respondents if desired.

2. Instructions: - Always simple, clear, and repetitive where necessary. Keep to a minimum and make sure they are easy to administer if given by an interviewer.
3. Actual Questions: - See Sections on Question Content and Question Formats.
4. Classification Data: - normally these are demographic information and respondent characteristics to ensure the target population has been sampled adequately.
5. Identification Data: - this may include names, addresses, and telephone numbers and/or identification numbers of participants to keep track of respondents and to facilitate follow-up procedures.

3.4.2 General Layout

After identifying the people who will respond to the questionnaire together with their characteristics was to concentrate on the design of the questions that provided the essential knowledge for the study. The way in which the survey questions were presented has an effect on the quality of the responses hence needful to guarantee that accurate questions were posed, understood well and presented in the correct format (Wahab, 1996). The questionnaire comprised questions primarily closed-ended and scaled-response nature and the questions were typed on normal A4, white colour sheets including a cover page.

Fellows and Liu (2008) suggest two ways of posing questions; namely open and closed ended. This study adopted the closed ended questions as it looked for specific facts and required a number of responses as determined. Data for this study was

analyzed using the Statistical Package for Social Sciences (SPSS) software version 17.All questions were coded and incorporate into the questionnaire.

3.4.3 Content of the Questionnaires

The uniqueness of responses is normally affected by the type of questions and the way by which this question were asked or presented. Questions that are asked should be clear and understood by all respondents and response to the questions correctly or rightly. The questions that were asked amounted to a total of fifteen (15) this consisted of four (4) sections: Section one (1) was demographics; this is about the general information about the respondent such as organization, programme of study, level and gender. The section two (2) was to assess the knowledge of the respondent on the types of contractor insurance options known him or her, why contractor insurance option should be considered. Section three (3) required the respondents to rank the determinant factors that shows or indicate the need for the acceptance of the contractor insurance into practice by contractors on the Likert scale of 1 to 5, where 1=not critical and 5=very critical. While the fourth (4) section will also rank the innovative or innovations that can be introduce to improve contractor insurance within the CI on the Likert scale of 1 to 5, where 1= strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5= strongly agree. Questionnaires were given out and retrieve by the researcher. This safeguarded the response rate of intended recipients questionnaires were completely filled.

3.4.4 Scope of Questionnaire Survey

Geographically the research was limited to Kumasi, since most of the contractors are located in Kumasi and has their offices within the city. D1K1, D2K2, D3K3 and D4K4 contractors were considered and a lot of them were located in this city.

3.4.5 Instrumentation and Response Rate

Try to engage with the respondent as a person, for instance, give out paper-based questionnaires on a clipboard face-to-face while you are waiting or email people who

already know you (but watch out for possible bias), and give your questionnaire a short and meaningful title. Begin by introducing yourself and the purpose of your research. Keep it as short and succinct as possible. Offer incentives for responding, if appropriate. Make it look attractive, through the use of colour and images. Make it convenient, by enclosing a stamped address envelope for a postal questionnaire.

3.4.6 Sampling Technique and Sample size determination

The term "sampling" denotes drawing part of a population or to represent a whole (population) (Naoum, 1998). The population of a study contains all measurements, people and things of interest. According to Naoum (1998), it is largely specified that the bigger the population the lesser the proportion of that population.

Nevertheless, research studies make use of small and simple fraction of the entire population size which is referred to as 'sample'. The reason is that, using a sample is the practical and cost-effective means of collecting data considering the entire population size. The sampling technique used for this study, founded on its practical implication, design and purpose of the research topic is purposive sampling. Simply put, the researcher decided on the needs of the study and finding the right people or respondents who willing to assist in providing the needed information by virtue of experience and knowledge (Tongco, 2007; Lewis and Sheppard, 2006; Bernard, 2002). In the framework of this study, this approach involves pinpointing contractors, clients and consultants to ascertain the need for contractor insurance in the CI.

3.4.7 Sample Size Determination

The sample size required for the study is influenced by several factors, including the level of confident or risk, purpose of the study, the level of precision, the degree of

variability in the attributes being measured, and the population size, (Miaoulis and Michenser 1976 Cited in Glenn, 2012).

The sample size for the research can be determined using (a) figures in published tables (b) Sample size of similar studies (c) A consensus for small populations and (d) Formulas. For this research and study, the Kish formula was used which was developed by Kish in 1965.According to Glenn (2012), sample size for a study can be determined using (a) figures in Published tables (b) Sample size of similar studies (c) A consensus for small populations and (d) Formulas. In this study, used the formula developed by Kish in 1965.

From his formula,

n= n^1 (1 + $n^1/_N$) ……(1)

Where, n = the sample size, N = the total population size (320 of contractors and consultants)

$n^1 = S^2/_{V^2}$ ……(2)

V= the standard error of sampling distribution assumed to be 0.05

S= the maximum standard deviation of the population size (Total error of 0.05 @ 95% confidence level)

S^2= P (1–P) ……..(3)

Where, P = the proportion of the population elements that belong to the defined contractors assumed to be 0.79

From eqn (3), S^2= P (1–P) = 0.79 (1– 0.79) = 0.166

From eqn (2),$n^1 = {S^2}/{V^2} = {0.166}/{0.05^2} = 66$

From eqn (1), n= n^1 (1 + ${n^1}/{N}$) = 66 (1 + ${66}/{330}$) = 66 questionnaires

Add17.5% for wastages……= 12

Total questionnaires = 66 + 12 = **78** No.

3.5 DATA ANALYTICAL TOOL

Choosing an analytical tool depends on a complete review of the various available statistical and analytical tools. For this study, the decision on statistical thoughtfulness was to make a comprehensive choice between non-parametric and parametric statistical test. Choosing between the aforementioned tools depends on the level or measurement achieved in this research and the types of variables involved. The foremost tool considered for this study was the non-parametric statistical tool which engaged mean score index.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

This chapter presents the analysis of data and discussion of results with the use of Statistical Package for Social Sciences (SPSS) version seventeen (v 17). The other sections 1, 2, 3 and 4 are discussed as follows. Section 'One' discusses the characteristics and background information of companies and respondents. Section 'Two' sought to collect some information on the type of Contractor insurance Options among CI in Ghana. Section 'three' intends to analyse the perception of respondents on the Determinants of Contractor insurance selection in Ghana and the final Section 'Four' focuses on the potential innovation in Contractor insurance options in the CI.

4.2 SECTION'1' CHARACTERISTICS AND BACK GROUND INFORMATION

Presentation and Descriptive Analysis of Data

The respondents' background information provides descriptive data on the individual respondents. Specifically, it provides information on gender, years of experience in the CI. The characteristic background also explores on the type of company or organization, classes of companies, and the type of construction business these companies offer to the CI in Ghana. The information here is important as it will confirm the viability and the validity of the results and thus develop comprehensive information on the background of the participants with alongside experience in CI.

4.2.1 Gender of Respondents

The purpose of this question is to identify the gender of respondents. The proportion of males who participated in the study is approximately 76.70% as compared to 23.30% females as shown in Table 4.2.1 below.

Table 4.1: Gender of Respondents

Gender of Respondents	Frequency	Percent (%)	Cumulative Percent (%)
Male	46	76.7	76.7
Female	14	23.3	100.0
Total	**60**	**100.0**	

Source: Field Survey, 2016

The gender of respondents clearly indicates that, the CI is an institution that has more males than females in its population. The general population in figure 4.1 of the respondents has (23.3%) females and (76.7%) as males respectively. The results indicated that the ratio of female to male is 1:4. This clearly corroborates the perception that females finds it challenging to work in the CI due to its difficult, demanding and physical nature (CIDB, 2007). Additionally, Owusuaa (2012) indicated that, the number of women in the CI is few because of the cultural norms of the country and the view that women are feeble in working up to the expectation considering the nature of physical activities involved in the industry.

4.2.2 Organization Type of Respondents.

CI demands a team of professionals within an organization before a project can come to its final state of usage. This organization comprises the client (as the employer), the Consultant (as the mediator to take charge and monitor the project at a fee from the client, from the start to the completion of the project.), the Contractor (as the one

putting up the project at a cost) and other stakeholders who are of interest. However this research seeks to identify the two main Organizations that play a very significant role in the CI (i.e. the Contractor and the Consultant).The Table 4.2 below shows the type of organizations respondents have been working with as far as construction project is concern. It indicates that 41 of the respondent are working with Contractors which represent 68.3% and 19 of the respondent are working with Consultant representing 31.7% respectively. This shows that Contractors have a larger percentage as compared to Consultants and other stakeholders in the CI.

Table 4.2: Organization type respondent belong

Organization Type	Frequency	Percent (%)	Cumulative Percent (%)
Contractor	41	68.3	68.3
Consultant	19	31.7	100.0
Total	**60**	**100.0**	

Source: Field Survey, 2016

4.2.3 Class of contractors' respondent belong.

The CI is found of different types of Contractor classes. However, it was important to assess the type of Contractor classes that respondents belongs to, in order to ascertain the validity of information provided for this research work. The Classes of contractors of respondents in Table 4.3 are D1K1, D2K2, D3K3 and D4K4 respectively. According to the results as presented in the table below, it indicates that 30 of the respondent belongs to D2K2 Class of Contractor which represents 50%, followed by 17 as D1K1 which represent 28.3% with 9 belonging to D3K3 which also represents 15% and 4 as D4K4 with 6.7% respectively. This reflects that respondents used for the research belongs to certain class of Contractors.

Table 4.3 Class of contractors' respondent belong.

Class of Contractor	Frequency	Percent (%)	Cumulative Percent (%)
D1K1	17	28.3	28.3
D2K2	30	50.0	78.3
D3K3	9	15.0	93.3
D4K4	4	6.7	100.0
Total	60	100.0	

Source: Field Survey, 2016

4.2.4 Respondents working experience in the CI.

The higher the experience of the respondent in the CI, the better the understanding of the questions and necessary requirement for every construction project. Respondents specified their number of years in the CI. Table 4.4 below shows the number of years respondents have worked in their respective companies. It indicates that majority of the respondents have worked between 5-10years representing 43.3% followed by 25% with work experience between below 5years and 14% having 11-20years working experience. Only 5 respondents indicated more than 20years and beyond representing 8.3%. This shows that respondents have been in the CI for quite a long period and have gained greater experience and are able to provide a reliable data on the innovations in Contractor Insurance Options in the CI.

Table 4.4 Respondents working experience in the CI

Working Experience	Frequency	Percent	Cumulative Percent
Below 5 years	15	25.0	25.0
5-10Years	26	43.3	68.3
11-20Years	14	23.3	91.7
20years and beyond	5	8.3	100.0
Total	60	100.0	

Source: Field Survey, 2016.

4.2.5 Respondents type of Construction business.

Apart from the classes that Contractors should engage in as by company law in Ghana, there is also an option for these Contractors to choose the kind of Construction business they want to operate. It was very necessary to identify the type of Construction businesses that respondents find themselves in, to determine the authenticity of provided information for this study. The types of business operations contractors engaged in, from Table 4.5, are Building Construction, Supply of Construction material and Civil Engineering works. From the table below, 25 of the respondent are into building construction which represents 41.7%, followed by 23 as supply of construction materials which represent 38.3% with 12 belonging to civil engineering works representing 20% respectively.

Table 4.5. Respondents and type of Construction business.

Type of Construction business	Frequency	Percent (%)	Cumulative Percent (%)
Building Construction	25	41.7	41.7
Supply of Construction Materials	23	38.3	80.0
Civil Engineering works	12	20.0	100.0
Total	**60**	**100.0**	

Source: Field Survey, 2016.

4.3 SECTION‘2’ TYPOLOGY OF CONTRATOR ISURANCE IN THE CI

4.3.1Application of Contractor Insurance

The CI worldwide involves many forms of activities that exposes it products, professional, services providers and consumers in the industry to so many forms of risk and uncertainties in various dimensions. Risk is the likelihood, chances or possibility of occurrence of a danger to a construction activity or injury to a construction professional, worker, service provider, equipment among others (Ringen, *et al.*,1995).However respondent were asked to indicate whether the organizations they find themselves in has ever undertaking any form of contractor

insurance in their company. The Table 4.6 below shows that 34 of the respondent indicated 'Yes' representing 56.7% with 26 of the respondent indicated 'No' which also represent 43.3%.This shows that although some organization has been paying much attention on some of the insurance like Performance and security bond which are critical for the project, yet much attention has not been emphasized on the subject of risk and uncertainties in various dimensions in construction activities.

Table 4.6. Application of Contractor Insurance

Contractor insurance	Frequency	Percent (%)	Cumulative Percent (%)
Yes	34	56.7	56.7
No	26	43.3	100.0
Total	**60**	**100.0**	

Source: Field survey, 2016

4.3.2 Offer of insurance policies by insurance companies in the CI

The Table 4.7 below shows that 34 of the respondent indicated 'Yes' representing 56.7% with 26 of the respondent indicated 'No' which also represent 43.3%.This shows that although some insurance companies has been offering insurance policies to construction companies, the knowledge on the importance of such policies to their company is limited.

Table 4.7. Offer of insurance policies by insurance companies in the CI

Do insurance companies offer you any insurance policies in your organization	Frequency	Percent (%)	Cumulative Percent (%)
Yes	34	56.7	56.7
No	26	43.3	100.0
Total	**60**	**100.0**	

Source: Field survey, 2016

4.3.3 Review of policies and requirements for each contract specification

The table 4.8 below shows that 25 of the respondent indicated 'Yes' representing 41.7% with 35 of the respondent indicated 'No' which also represent 58.3%. This shows that although some insurance companies has been offering insurance policies to construction companies yet reviewing these policies and requirements becomes a problem due to the awareness of insurance policies needs of contractors and also high premium charged to the insured by insurers and the lack of record regarding to the construction insurance and also these insurance companies do not know or have an approved premium rate for risks on construction site. As a result, they charge extra in order to cover the risks and as well ensure cost-effectiveness of which most contractors sometime cannot afford to review their insurance policies after one has expired. Due to these difficulties and challenges the insurance company's faces, reviewing an insurance policies becomes difficult.

Table 4.8. Review of policies and requirements for each contract specification

Do insurance companies review the policies and requirements for each contract specification?	Frequency	Percent (%)	Cumulative Percent (%)
Yes	25	41.7	41.7
No	35	58.3	100.0
Total	**60**	**100.0**	

Source: Field survey, 2016

4.3.4 Contractor insurance options services provided by insurance companies

Respondent were asked to indicate from Table 4.9 below the list of contractor insurance options that insurance companies have been providing to their company. It was revealed that apart from Performance bond and workers compensation insurance, Building and commercial property insurance that most of the construction companies do go in for as a critical requirement to a contract document and building regulation Law use in Ghana, much attention has not be emphasized on the remain options (i.e. Healthcare insurance, Transportation insurance, Property Insurance, Professional insurance, Business insurance) as indicate in table 4.3.4 below.

Table 4.9. Types of Contractor insurance options services

Types of Contractor insurance options	Frequency			Percent (%)		Cumulative Percent (%)
	Yes	No	Total	Yes	No	
Workers Compensation	42	18	60	70	30	100
Performance bond	55	5	60	91.7	8.3	100
Healthcare Insurance	15	45	60	25	75	100
Transportation Insurance	22	38	60	36.7	63.3	100
Property Insurance	28	32	60	46.7	53.3	100
Professional Service	26	34	60	43.3	56.7	100
Business Insurance	17	43	60	28.3	71.7	100
Building and Commercial Property Insurance	31	29	60	51.7	48.3	100
TOTAL	**236**	**244**	**480**	**393.4**	**406.6**	**800**

Source: Field Survey, 2016

4.3.5 Provision of contractor insurance policy by respondents.

The table 4.10 below shows that 37 of the respondent indicated ‘Yes’ representing 61.7% with 23 of the respondent indicated ‘No’ which also represent 38.3%.

Table 4.10 Provision of contractor insurance policy by respondents.

Have your company provided any contractor insurance policy before.	Frequency	Percent (%)	Cumulative Percent (%)
Yes	37	61.7	61.7
No	23	38.3	100.0
Total	**60**	**100.0**	

Source: Field Survey, 2016.

4.3.6 Ranking of Contractor insurance option in the CI.

The Table 4.11 below represents the breakdown of the reasons why contractor asked for insurance options in the CI. It indicates that to protect construction workers is the most important reason why contractors seek for insurance options obtaining a Relative Importance Index (RII) of 0.913 and a mean value of 4.57. To meet contractual obligation ranked the second option and attained an RII of 0.893 with mean value of 4.47. Followed by to secure third parties who are not part of the contract which attained a relative important index of 0.887 with a mean value of 4.43. To secure the work against contractual obligation was ranked fourth with an RII of 0.863 and a mean value of 4.31. This is closely marked by, to fulfill regulatory requirements with a relative important index of 0.870 and mean value of 4.35. Accident cause by force Majeure was ranked the next options with an RII of0.847 and a mean value of 4.23.To provide job security was ranked the 7^{th} options for contractor insurance with an RII of0.847 and a mean value of 4.23 followed by to avoid abandoning of projects, and delays in construction project ranked 8^{th} and 9^{th} position of contractor insurance option with a relative importance index of 0.793 and 0.720 and a mean score of 3.97 and 3.60 respectively. From the findings it shows that protection to construction workers is the means why contractors should go in for contractor insurance since once a workers are insure and there is any injury the contractor will have a sound mind to continue the project and finish as scheduled.

Table 4.11 Ranking of Contractor insurance option in the CI.

Possible reasons why contractors asked for insurance options	N	Score (∑W)	Mean score	Std. Deviation	RII	RANK
To protect Construction workers	60	274	4.566	1.125	0.913	**1st**
To avoid delays in completing projects	60	216	3.600	1.729	0.720	**9th**
To avoid abandoning of projects	60	238	3.966	1.449	0.793	**8th**
To provide job security for the contractors	60	240	4.000	1.327	0.800	**7th**
Accident caused by force Majeure	60	254	4.233	1.094	0.847	**6th**
To fulfill regulatory requirements	60	261	4.350	1.038	0.870	**5th**
To meet contractual obligation	60	268	4.466	0.832	0.893	**2nd**
To secure the work against contractual obligation	60	259	4.316	1.112	0.863	**4th**
To secure third parties who are not part of the contract.	60	266.00	4.433	0.963	.0.887	**3rd**

Source: Field Survey, 2016.

4.4 SECTION‘3’ DETERMINANTS OF CONTRACTOR INSURANCE SELECTION IN THE GCI.

4.4.1 Ranking of factors influencing the selection of contractor insurance options in the CI.

This section sought to identify the critical factors that influence the selection of Contractor insurance options in the CI. Respondents ticked the critical factors that were applicable in their company on basis of Not Critical, less critical, Neutral, Critical, and Very Critical.

Table 4.12 Ranking of factors influencing the selection of contractor insurance options in the CI.

Determinants in Contractor Insurance	N	Score (∑W)	Mean score	SD	RII	RANK
1. Contract Parameter					**0.789**	**3rd**
The Contract period (working time)	60	244	4.067	1.006	0.813	1st
Mutuality of obligation	60	242	4.033	1.057	0.807	2nd
Intention of the parties to the contract	60	241	4.017	0.965	0.803	3rd
Contract wording and working practice	60	231	3.850	1.071	0.770	4th
2. Contractor parameters					**0.775**	**5th**
Financial risk	60	256	4.267	0.098	0.853	1st
Contractor resources	60	241	4.017	0.097	0.803	2nd
Experience of contractor	60	240	4.000	0.111	0.800	3rd
Contractor in business own accounts	60	239	3.983	0.118	0.797	4th
Provision of equipment	60	225	3.750	0.134	0.750	5th
Relationship with the contractor	60	213	3.550	0.147	0.710	6th
Contractor service substitution	60	213	3.550	0.127	0.710	6th
3. Project parameters					**0.813**	**2nd**
Project duration	60	254	4.233	0.105	0.847	1st
Size of the project	60	246	4.100	0.116	0.820	2nd
The use of the project	60	230	3.833	0.124	0.767	3rd
Complexity of the project	60	245	4.083	0.139	0.817	4th
4. Client parameters					**0.785**	**4th**
The Type of client	60	244	4.067	0.132	0.813	1st
Basis and timing of payments	60	238	3.967	0.128	0.793	2nd
The Political season	60	233	3.883	0.149	0.777	3rd
Control and direction of client	60	227	3.783	0.128	0.757	4th
5. Consultant parameters					**0.616**	**8th**
The Type of Consultant	60	250	4.167	0.107	0.833	1st
Experience of Consultant	60	249	4.150	0.121	0.830	2nd
Knowledge of Consultant	60	240	4.000	0.119	0.800	3rd
6. Third party parameters					**0.638**	**7th**
The type of third party involved	60	260	4.333	0.108	0.867	1st
External parties interest	60	254	4.233	0.120	0.847	2nd
The nature of the locality of the project	60	252	4.200	0.094	0.840	3rd
7. Industry parameters					**0.601**	**9th**
The regulatory environment	60	243	4.050	0.113	0.810	1st
The construction industry Dynamics	60	243	4.050	0.087	0.810	1st
The Insurance industry Dynamics	60	235	3.917	0.110	0.783	2nd
8. Legal framework parameters					**0.643**	**6th**
As part of contractual obligations	60	260	4.333	0.081	0.867	1st
To meet regulatory requirements	60	258	4.300	0.080	0.860	2nd
The changing face of both industry	60	253	4.217	0.095	0.843	3rd
9. Insurance Companies parameters					**0.893**	**1st**
Awareness of insurance policies needs of contractors	60	274	4.567	0.087	0.913	1st
Extent of knowledge in the construction business	60	268	4.467	0.096	0.893	2nd
Knowledge in construction risk	60	261	4.350	0.100	0.870	3rd
10. Determinants of Contractor Insurance options					**0.893**	**1st**
Determinant of Contractor insurance options is the key to the development of the construction industry	60	268	4.467	0.087	0.893	1st

Source: Field Survey, 2016.

4.4.2 Ranking of determining factors influencing the selection of contractor insurance options.

Respondents indicated their agreement level on the criteria for identifying critical factors that influence the selection of Contractor insurance options in the CI as applied in their companies. In assessing the views of these criteria, RII was used to rank the variables that are highly weighted (very critical) in relation to the other factors. The mean ranking of all the critical success factors are significantly high showing that there is a general agreement that these factors can be applied in assessing the critical factors that will influence the selection of contractor insurance options in the CI. As shown from the Table 4.13, the most important factor is Insurance Companies parameters with RII of 0.893. This is a confirmation to the fact that, Insurance companies see contractor insurance as means of opportunity to increase their profit margin but they do not have enough experience leading to unreliability. Furthermore, over-extended coverage at inadequate premiums due to competition among insurance markets which results in difficulty for insured to be indemnified by insurers in a major calamity and very high premium charged to the insured by insurers due to the fact that they are mindful of the approach and the lack of record regarding to the construction insurance. Also insurers do not know or have an approved appropriate premium rate for construction risks and consequently, they charge more to cover the risks and to ensure profitability. All these parameters waving around these insurance companies therefore drives contractors back from opting for any insurance policy for their companies. The next factor from the table was project parameters with an RII of 0.813. The indices of the other factors follow the order as listed in the summary of table 4.4.2

Table 4.13 Ranking of determining factors influencing the selection of contractor insurance options.

Determinants in Contractor Insurance	RII	RANK
Insurance Companies parameters	0.893	1
Project parameters	0.813	2
Contract wording	0.789	3
Client parameters	0.785	4
Contractor parameters	0.775	5
Legal framework parameters	0.643	6
Third party parameters	0.638	7
Consultant parameters	0.616	8
Industry parameters	0.601	9

Source: Field Survey, 2016.

4.5 SECTION‘4’ POTENTIAL INNOVATIONS IN CONTRACTOR INSURANCE OPTIONS IN GHANAIANCI.

4.5.1 Ranking of potential innovations options influencing the selection of Contractor insurance options in the CI.

In Table 4.14 below, respondents level of agreement indicates that Contractor insurance options and innovations is the key to the development of the insurance industry is the most potential innovational factor among the other factors that can influence the selection of Contractors insurance options in the CI obtaining a RII of 0.973 with a mean value of 4.68 followed by Delivery strategy information and Regulatory and legal innovations which obtained a comparable RII of 0.857 and a mean value of 4.28.Diverse process in dealing with customers and Economic and social innovations was ranked Fourth (4th) with a similar RII of 0.850 and a mean value of 4.25. This was followed by Diverse insurance product with an RII of 0.833 and mean value of 4.22.Marketing strategy adopted rank Eighth (8th) from the table obtaining an RII of 0.803 and a mean value of 4.02.Access to new service, Organizational structure and system interaction are the last three potential innovation options ranked by respondents (9th, 10th and 11th) obtaining a RII of 0.800, 0.760, 0.750 and a mean value of 4.00, 3.80, 3.75 respectively. From the Table it can be

concluded that although all these factors contributes to option that may influences contractor insurance selection, contractor insurance options and innovations is key factor to the development of the insurance industry. Thus, once new ideas are introduced it influence others to insure their properties or works and once these people goes in for the insurance premium were paid and taxes out of this premium will be used to boost the economy of the country.

Table 4.14 Ranking of potential innovations options influencing the selection of Contractor insurance options in the CI.

Types of innovations in construction insurance	N	Score (∑W)	Mean score	SD	RII	RANK
Diverse insurance product	60	253	4.217	0.083	0.843	**4th**
Diverse process in dealing with customers	60	255	4.250	0.077	0.850	**3th**
Marketing strategy adopted	60	250	4.167	0.133	0.833	**5th**
Access to new service	60	240	4.000	0.143	0.800	**7th**
Organizational structure	60	228	3.800	0.132	0.760	**8th**
System interaction	60	225	3.750	0.108	0.750	**9th**
Delivery strategy information	60	257	4.283	0.098	0.857	**2nd**
Conceptual insurance innovations	60	241	4.017	0.097	0.803	**6th**
Regulatory and legal innovations	60	257	4.283	0.092	0.857	**2nd**
Economic and social innovation	60	255	4.250	0.146	0.850	**3th**
Contractor Insurance options and innovation is key to the development of the insurance industry	60	281	4.683	0.081	0.937	**1st**

Source: Field Survey, 2016.

CHAPTER FIVE

CONCLUSIONAND RECOMMENDATIONS

5.1 INTRODUCTION

According to Bunni (2003), the cause of the extreme matrix of risk in the construction industry is basically the nature of the activities involved in construction projects. However the provision of contractor insurance is in general measured very important and indeed in the occurrence of major harm or losses, the insurance is the only means of ensuring that the project is back on track (Badu 2012).This study therefore seeks to critically examine contractor insurance options and to determine potential innovations in insurance delivery in the construction industry in Ghana. The chapter one presented the research background, the problem statement, the research aim and objectives, the scope of the research, and the research questions. The chapter two of this document presented pertinent literatures which are in connection with the theme of this study. In chapter three, the research methodology emphasized on the systematic approach used in the study and discussions on the analytical tools used for data collection. The chapter four made a presentation on the empirical analysis and as well gave comprehensive discussions on the results of the survey. This chapter five being this very chapter summarizes the findings, and again presents conclusions and recommendations for the study as well as the limitation of this research.

5.2 ACHIEVING THE RESEARCH OBJECTIVES

This research was instigated with the primary aim to critically examine contractor insurance options and to determine potential innovations in insurance delivery in the construction industry in Ghana. In order to achieve the stated aim, research objective is set in Section 1.3.2. The Objective was achieved mainly through literature reviews

and the survey questionnaires which were conducted. Below are discussions on how the objective was achieved.

5.2.1 To Ascertain the Nature and Typology of Contractor Insurance Options in the CI of Ghana

The objective of this study was to ascertain the nature and typology of contractor insurance options in the construction industry through an in-depth questionnaire. The analysis review that, some construction has been paying much attention on some of the insurance like Performance and security bond which are critical for the project, yet much attention has not been emphasized on the subject of risk and uncertainties in various dimensions in construction activities. It was also found out that although some insurance companies has been offering insurance policies to construction companies, the knowledge on the importance of such policies to their company is limited. Furthermore the analysis proved that some insurance companies has been offering insurance policies to construction companies yet reviewing these policies and requirements becomes a problem due the awareness of insurance policies needs of contractors and also high premium charged to the insured by insurers and the lack of record regarding to the construction insurance and also these insurance companies do not know or have an approved appropriate premium rate for construction risks and consequently, charge more to cover the risks and to ensure profitability of which most contractors sometime cannot afford to review their insurance policies after one has expired. The analysis continue to review that apart from Performance bond, workers compensation insurance and Building and commercial property insurance that most of the construction companies do go in for as a critical requirement to a contract document and building regulation Law use in Ghana, much attention has not be emphasized on the remain options (i.e. Healthcare insurance, Transportation

insurance, Property Insurance, Professional insurance, Business insurance,) which also plays an important and critical role as far as construction risk and insurance is concern. in conclusion to the first objective was the possible reason why construction companies may opt for contractor insurance options and it was revealed that, the ultimate reason is to protect construction workers as was justified by Ringen et al., (1995) that Risk is the likelihood, chances or possibility of occurrence of a danger to a construction activity or injury to a construction professional, worker, service provider, equipment among others. Hence protection to these resources cannot be overemphasized.

5.2.2 Determinant of Contractor Insurance Selection in Ghana.

This objective was also conducted through a surveyed questionnaire in other to ascertain the level of agreement of respondent on the determining factors that will influence the selection of contractor insurance options in the construction industry. From the analysis conducted it was shown that among all the critical factors stated, (i.e. Contract parameter ,Contractor parameter ,Project parameters ,Client parameters ,Consultant parameters, third parties parameters, industry Parameters, Legal frame work parameter, Insurance companies parameters and determinant of contractor insurance options)., Determinant of contractor insurance options the key to the development of the construction industry and insurance companies parameters stands out as the most important factor in the selection of contractor insurance. This is evident that Construction industry (CI) is an industry which has a lot of factors that can affect the successful completion of the project or construction in question. This factors can cause a lot of problem which at long last will affect both parties involved (the client and the contractor). To avoid these factors from coming on both the contractor and the client which will at last affect the completion of the project, the

contractor insurance is the means that can be used to transfer those risks which may come up during the construction process and that will release both parties. These factors have been discussed in the analysis under the possible reasons why contractor opt for contractor insurance in objective one above.

5.2.3 Potential Innovations in Contractor Insurance Options in GCI.

The last but not the least objective for this research probes to contribute to the potential innovation in the contractor insurance options in the GCI. The analysis from the questionnaire revealed that all the innovation types contribute to a potential innovation insurance options but Contractor insurance options and innovation was ranked the most important key to the development of the Insurance and CI.

5.3 CONCLUSION

The findings of this research confirm to the benefits that accrue from an in depth knowledge on the typology of Contractor insurance option to be adopted by contractors and their importance to the CI on the subject of risk and uncertainties in various dimensions in construction activities. The finding also revealed that Determinant of contractor insurance options the key to the development of the CI stands out as the most important factor in the selection of contractor insurance.

Again, findings from this research including those found in literature are in support of the idea that the use of newly innovational insurance policies will contribute to improve customer satisfaction (i.e. Contractors and other construction business operators), optimum knowledge in insurance products offered, proper regulatory and legal standards for insurance policies, and improvement in market competitions and relationships with insurers.

5.4 RECOMMENDATIONS

Risk and uncertainties associated with construction works, but with contractor insurance contractors will be protected and also have a sound mind during and after a construction process. Contractor insurance needs total innovations to bring contractors on board whether it is mandatory have insurance. The following points can be recommended to construction companies and insurance companies in under taking contractor insurance in or within the GCI.

- Studies carried out, should cover more regions within the country to determine the effectiveness of contractor insurance to the CI in Ghana, while using a representative sampling technique.
- Contractors should be given a lot of education on the need of insurance at all times.
- Means of accessing claims should be sample and easy to influence contractors for contractor insurance at period (with or without contract).
- Insurance policies should be introduced in schools as a course to create awareness of students on insurance and its benefits.
- Insurance should be made mandatory to all people that will be involved in construction industry.
- Other industries aside the construction industry should be made to undertake insurance when they are undertaking a works since the insurance in the key to the nation development.

5.5 LIMITATIONS TO THE STUDY

This research has some shortfalls just like any other research in its conduct. These shortfalls give a sound basis for future research work. The shortfalls for this research were:

- Only published literature were included in the study of research
- The analyses as well as the conclusion of this research were on the basis of the data and results which were accessed using questionnaire from respondents. Potential effects of measurement and sampling errors which might have affected the data collection, the analysis done, as well as the conclusions drawn.
- The research will be limited to only D1K1, D2K2, D3K3 and D4K4 companies which includes the insurance companies within the Kumasi metropolis due to time limit and difficulties in getting other stakeholders.
- Again, the sampling techniques adopted in this study would rather have been representative of the sample population through the adoption of the simple random sampling techniques; but factoring the time and the cost that would be involved, the non-probability sampling method was rather adopted to access the needed information quicker from respondents.

5.6 DIRECTIONS FOR FUTURE RESEARCH

- Future research should look at contractor insurance as key factor for development of country economy.
- Future research may focus on gender division in the CI, understanding the reasons behind low levels of female contractors compared with other industries, and develop means to enhance the female within the working environment of CI.

- Future research should explore the essential for contractor insurance within the CI to contractors at all times.

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APPENDICES

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF BUILDING TECHNOLOGY

QUESTIONNAIRES

TOPIC: Innovations in Contractor Insurance Options in the Construction Industry of Ghana

PURPOSE: To explore the potential innovations in contractor insurance options in the construction industry of Ghana

PROGRAMME: MSc CONSTRUCTION MANAGEMENT

RESEARCHER: Samuel Oppong Sarpong

SUPERVISOR: Dr. De-Graft Owusu-Manu

INFORMATION

The research is for academic purpose only. All information provided by the respondents will be held privately and confidentially.

Please **tick** the appropriate box in response to the questions and where appropriate write the necessary response or comment.

Position / Status of respondent.....

Section 1: Biographic Data

1. Gender [ ]Male [ ] Female
2. Which type of organization do you find yourself in?

   [ ] Contractor [ ] Consultant
3. Which class of contractor do you belong to?

   [ ] D1 K1 [ ] D2 K2 [ ] D3 K3 [ ] D4 K4
4. How many years have worked within the organization?

   [ ] below 5 years [ ]5-10 years [ ]11-20 years

   [ ] 20 years and beyond.
5. Have you ever under taken anything on Contractor insurance?

   Yes [ ] No [ ]
6. What type of construction business do you operate?

   [ ] Building Construction

   [ ] Supply of Construction materials

   [ ] Civil Engineering works

Section 2: Typology Contractor Insurance Options In the Construction Industry of Ghana

7. Do the insurance companies offer to you any insurance policies within the Construction industry? Yes [ ] No [ ]
8. Do the insurance company review the policies and requirement for each contract specifications? [ ] Yes [ ] No
9. The table below is a list of contractor insurance options services that insurance companies have being providing, which of them do you agreed with and your company been offering to contractors?

Item	Types of Contractor Insurance options	Yes	No
1	Workers Compensation		
2	Performance Bond		
3.	Healthcare Insurance		
4.	Transportation Insurance		
5.	Property Insurance		
6.	Professional Services		
7.	Business Insurance		
8.	Building and Commercial Property Insurance		
9	Others (name them)		

10 Have your company provided any contractor insurance policy before?

Yes [ ] No [ ]

11. If the answer to the above is yes, then kindly indicate the type of contractor insurance provided?

12. The following are possible reasons why contractors asked for insurance options in the construction industry. Please use the Likert scale of 1-5, please indicate your

level of agreement with each of the variables indicated below. Key: 1. Strongly Disgree2. Disgree3. Neutral 4. Strongly Agree5. Agree

Item	Reasons for Contractor Insurance options	Strongly Disagree	Dis-agree	Neutral	Agree	Strongly Agree
1	To protect construction workers					
2	To avoid delays in completing projects					
3	To avoid abandoning of projects.					
4	To provide job security for the contractor					
5	Accident caused by Force Majeure					
	To fulfil regulatory requirements					
6	To meet contractual obligation					
7	To secure the work against disaster					
8	To secure third parties not part of the contract					

Section 3: Determinants of Contractor Insurance Option Selection in Ghana.

13. The following are factors that will influence the selection of contractor insurance option in the construction industry. Please use the Likert scale of 1-5, please indicate your level of agreement with each of the variables indicated below. Key:

1. Not critical 2. Less critical 3. Neutral 4. Critical 5.Very critical

	Determinant of contractor insurance options	Not critical	Less Critical	Neutral	Critical	Very critical
1	Contract parameters					
	Contract wording and working practices					
	The contract period (time of completion)					
	Mutuality of obligation					
	Intention of the parties to the contract					
2	Contractor parameters					
	Contractor service substitution					
	Provision of equipment					
	Financial risk					
	Contractor in business on own account					
	Contractor resources					
	Experience of contractor					
	Relationship with the contractor					
3	Project parameters					

	Complexity of the project					
	Project location					
	The use of the project					
	Size of the project					
4	Client parameters					
	The type of client					
	Basis and timing of payments					
	The political season					
	Control &direction of client					
5	Consultant parameters					
	Experience of consultant					
	Knowledge of consultant					
	They type of consultant					
6	Third party parameters					
	External parties interest					
	The type of third involved					
	The nature of the locality of the project					
7	Industry parameters					
	The insurance industry dynamics					
	The construction industry dynamics					
	The regulatoryenvironment					
8	Legal framework parameters					
	The changing face of both industry					
	To meet regulatory requirements					
	As part of contractualobligations					
9	Insurance companies parameters					
	Knowledge in construction risk					
	Extent of knowledge in construction business risk					
	Awareness of insurance policies needs of contractors					
10	Determinant of contractor insurance option is key to the development of the construction industry					

Section 4: Contractor Potential Insurance Innovations Options in Ghanaian Construction Industry

14. The following are potential innovations insurance options that will influence the selection of contractor insurance option in the construction industry. Please rank them on a Likert scale of 1-5

please indicate your level of agreement with each of the variables indicated below. Key: 1. Strongly Disgree 2. Disgree 3. Neutral 4. Strongly Agree 5. Agree

Type of innovations in construction insurance	**Meaning**	**1**	**2**	**3**	**4**	**5**
Diverse insurance products	*new construction insurance endorsements and polices*					
Diverse processes in dealing with customers	*new kinds of deal management with contractors and other customers*					
Marketing strategy adopted	*implementation of group discounts for social networks of contractors*					
Access to new Service	*new claims service, for instance service for construction insurance*					
organizational structure	*creation of a new departments in your organisation*					
System interaction	*new association for direct insurance writers in Ghana*					
Delivery strategy innovations	*Accessing online claims service*					
Conceptual insurance innovations	*"nnovationsmconstruct" insurance product*					
Regulatory and legal innovation	*Changing regulations in the insurance industry*					
Economic and social innovation	*Variations in premium charge due to social relationship with a client contractor*					
Contractor Insurance options and innovation is key to the development of the insurance industry?						

15. Any other comments kindly indicate below

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2. SEE CONSULT
3. ASIB CONSULT
4. FRONLINE LIMITED
5. AESL LIMITED
6. AMAGAMATED GROUP CONSULT
7. OFOSU ADDO CONSULT
8. BI-ARCHITECT CONSULT
9. PROMACON CONSULT
10. SIC ENGINEERING LIMITED
11. KNUST DEVELOPMENT OFFICE CONSULT
12. TOP TECHNOCRATE LIMITED
13. BRRI CONSULT
14. KUMASI POLYTECHNIC DEVELOPMENT OFFICE CONSULT
15. UCEW-K DEVELOPMENT OFFICE CONSULT.

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9	G & A LTD	P.O.BOX SE 635 SUAME KSI
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52	AMAKYEREWA WNT	C/O/P.O. BOX 1987 KSI
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63	CONSAR LIMITED	P.O. BOX 1965 KSI
64	BEROCK VENTURES LTD	P.O. BOX 65 KSI
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92	MMANAB COMPANY LIMITED	P.O. BOX 4756, KUMASI
94	RIGHTWAY ENGINEERING COMPANY LIMITED	P.O. BOX KW 64, KWADASO - KUMASI
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119	FRONTLINE LTD	P.O. BOX UP 346, KNUST-KUMASI
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121	KOBKAS LIMITED	P.O. BOX 875, KUMASI
122	RICHHOUSE CONSTRUCTION WORKS LIMITED	P.O. BOX NT 246 , NEW TAFO-KUMASI
123	PEREGRINE FALCON LIMITED	
124	INTERSTATES A.B. LIMITED	P.O. BOX 301, KUMASI
125	ENEXT CONSTRUCTION LIMITED	P.O. BOX GP14578, KUMASI
126	AMPOMS ENTERPRISE	P.O. BOX 2295, SUNYANI, B/A
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129	A. KELLY COMPANY LIMITED	P.O. BOX 4760, KUMASI
130	DORISETHIN ENTERPRISE	P.O. BOX KS 1704, KUMASI
131	DAMKA-RES COMPANY LIMITED	P.O. BOX UP 418, KNUST - KUMASI
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