UNIVERSITY OF GHANA

ANALYSIS OF RISK MANAGEMENT PRACTICES OF SMALL AND MEDIUM ENTERPRISES (SMEs) IN THE CONSTRUCTION SECTOR OF GHANA

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JULY, 2019
DECLARATION

I hereby declare that this work is the result of my own research and has not been presented by anyone for any academic award in this or any other university. All references used in the work have been fully acknowledged.

I am solely responsible for any shortcoming.

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DATE
CERTIFICATION

I hereby certify that this thesis was supervised in accordance with procedures laid down by the university.

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DR. LORD MENSAH                                                                     DATE

(SUPERVISOR)
DEDICATION

I dedicate this thesis to my dear family for their understanding, love, care and support throughout my study.
ACKNOWLEDGEMENT

I am very grateful to the Almighty God for granting me strength and health during the duration of my studies. I wish to express my sincere appreciation to my Supervisor Dr. Lord Mensah for the immense assistance provided me in terms of guidance on topic selection, reference documents, suggestions and encouragement throughout this research process. I will forever remain grateful to him for enlightening me on research methods and writing skills during this brief period. I also want to acknowledge the support from Dr. Saint Kuttu and indeed all the assistance of the rest of the staff of the University of Ghana Business School.

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<tr>
<td>Co.</td>
<td>Company</td>
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<td>CPD</td>
<td>Continuous Professional Development</td>
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<td>EUR</td>
<td>Euro</td>
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<td>IASCF</td>
<td>International Accounting Standard Committee Foundation</td>
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<td>LAD.</td>
<td>Liquidated Ascertain Damages</td>
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<td>MWH</td>
<td>Ministry of Works and Housing</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
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<td>PWC</td>
<td>PricewaterhouseCoopers</td>
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<td>RM</td>
<td>Risk Management</td>
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<td>RMP</td>
<td>Risk Management Practices</td>
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<td>SME</td>
<td>Small and Medium Enterprise</td>
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<td>SSNIT</td>
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ABSTRACT

The importance of assessing the risk management practices by the small and medium scale enterprises (SMEs) in the recent times has been underscored by research. In this study, an analysis of risk management practices of the SMEs in the construction sector of Ghana is assessed to determine the level of awareness, the extent of its application and the potential impact on the construction business. This study is a follow up to previous studies risk management practices in the construction industry as the study specifically considers the SME contractor. In the study, data was obtained Owners and Directors of D2/K2 – D4/K4 contractors as certified by the Ministry of Works and Housing (MWH). The data was analyzed using descriptive statistics and frequencies.

The findings suggest that risk management practices application is still at reduced concentrations in SMEs operations. It can also be found that risk management in small and medium-sized enterprises is primarily focused on owners / managers beliefs that seriously hamper sustainable business development. The level of awareness is well documented, however the application of the practices is far less than the awareness level.

The finding of the study provide the basis for policy interventions aimed at building the capacity of the SMEs in the construction space and the Continuous Professional Development (CPD) agenda for owners and directors. It again provides for use by training institutions towards the development of training manuals for training of entrepreneurs.
CHAPTER ONE

1 Introduction
The construction industry is engulfed with uncertainty, perhaps even more than most industries
(Deviprasad, 2007). Ehsan et al. (2010) had also iterated that it is extremely hazard-inclined, with
circumstances of perplexing and dynamic enterprise creating a climate of high vulnerability and
risk. The construction firm is powerless against various specific, socio-political and company
hazards. Deviprasad, (2007) further stated that this risk is not managed satisfactorily over and over
again and that the company consequently suffered bad execution. As indicated by Pritchard (2001),
there are risks in the vast majority of choices, including the simplest ones. The technique of
bringing a venture from origin to consummation is a mind boggling that includes tedious planning
The main activity in project management is to drive the operations so that the people who settled
on the investment, the partners can achieve their aspirations. (Monetti, et al., 2006). Risk
management is fundamental to achieving these goals, not only to try to prevent horrible results
caused by some unusual occasions or questionable circumstances, but also to act as a guide to
enhance the beneficial results. Risk management is fundamental to achieving those goals, not only
to try to avoid terrible outcomes caused by some unusual occasions or dubious conditions, but also
to act as a guide to enhance the positive outcomes. Despite the reality that risk management is
usually considered, irrespective of a sensible and shared definition of the concept, opportunity is
often seen as an unwanted, adverse outcome. Such a definition exemplifies two deluding thoughts:
first, there is an established consensus among specialists that opportunity should be regarded as
having both adverse and positive results. Second, risk is not only recognized with occasions, e.g.
single activity purposes; however, risk also identifies with future projects. Conditions can end up being nice or awful.

The reality of the matter is that it is hard to anticipate future undertaking circumstances in the starting phases of the life-cycle of the assignment. In addition, circumstances may alter in the life cycle of the undertaking, and the danger is that the circumstances will be unique and possibly more extreme than earlier assessed. Dangers researched just as particular occasions for not taking the amount of impact into consideration are further reprimanded. Dangers are only on-off-types from moment to time, suggesting that hazards do not happen or "do not happen," the impact of hazard changes considerably, and depending on the circumstances in the conceivable event season (Finnerty, Floricel and Miller, Klemetti 2006). Inconstancy and the dimension of consistency (vulnerability) of future circumstances determine the nature of today's risk assessment. According to Osei (2013), one of the fastest-growing divisions occurs to be the building industry in Ghana, with an incredible ordinary growth of 7-8 percent per year. Business exercises have a great deal of vitality in achieving the goals of providing framework and employment for national financial improvement. It includes medical clinics, schools, townships, workplaces, houses, and various structures; urban foundations (counting water supply, sewerage, waste); expressways, streets, ports, railroads, aircraft terminals; control frameworks; water and horticulture frameworks; media communications, etc. The entrepreneur is any person that starts and operates a Small and Medium Enterprises (SMEs). SMEs are any enterprises with an all-out capital used not to exceed 10 million Ghanaian cedis and with personnel performance somewhere between 9 and 100 (Ghana Statistical Service 1992). SMEs around the globe take on imperative jobs over the period of industrialization, economic growth, and practical advancement of any industry (Ariyo, 2005). Small and medium-sized enterprises (SMEs) are effectively connected with the construction sector of Ghana. As noted
by Kulemeka et al., 2015; Osei, 2013 as noted in (Asante et al., 2018), the majority of contract employees in Ghana are in the SME segment.

In reality, it was stated by Amoah et al., 2011 that SMEs in the development section are spoken to by more than 90 percent of contract workers structure and structural design, which is coupled with the attestation that SMEs constitute 92 percent of Ghana's organisations (Abor and Adjasi, 2007).

Due to the one-size-fits-all highlights of development exercises, for instance, important lot, confused procedures, accursed situation, money-related power and vibrant association structures (Flanagan and Norman, 1993; Akintoye and MacLeod, 1997; Smith, 2003), as referred to in Yirenkyi-Fianko and Chileshe (2015), the development business is liable to more risks in contrast to other undertakings.

1.1 Background of the Study

Risk management practices (RMP) were developed to reduce risk to the undertaking. Be that as it may, among construction sector SMEs, RM is still not far reaching. Despite being anything but another concept, in any development project the board has late transformed into a growing need (Jurgensen, Duijm and Troen, 2010). RM in construction sector refers to a process involving the recognition, assessment and arrangement of operations to handle future hazards that may affect the successful achievement of venture objectives (Kraus et al., 2012). The powerlessness of owners of small and medium-sized enterprises to implement the RM practices has led to RM becoming one of the factors leading to a reduction in the sustainability of SMEs (Falkner et al., 2015). RM can assist small and medium-sized enterprises to skillfully handle adverse occurrences that could jeopardize efficient task destinations achievement. Marcelino-Sádaba et al. (2014) indicates that many small and medium-sized enterprises are not applying RMPs satisfactorily, usually due to the reality that they are unable to restore assets due to their demands. Furthermore, the absence of RM
schemes in the midst of countless risks remains a typical pattern among SMEs, a factor that could be strongly linked to the elevated level of disappointment (Nunes, Viveiros and Serrasqueiro, 2012). As Gao (2013) indicates, learning on the hazard of SME-related board processes remains inadequate, especially in less-created economies. In SME projects, the lack of reception and implementation of mitigated methodologies has resulted in countless undertakings failing to achieve set goals.

Risk is an indivisible part of each building cycle (Makui, et al 2009). Construction risk has been described as introducing economic loss development exercises due to unexpected occasions or anticipating opportunities for which vulnerability is not adequately suited (Jagboro et al., 2007). Wherever a development undertaking remains, it contains some of the distinctive risky elements, such as physical danger, ecological risk, opportunity of coordination, money-related risk, legal risk, and political hazard (Perry and Hayes, 1985). With building projects gradually becoming perplexing and vibrant in their inclination just as the presentation of fresh acquisition strategies, countless temporary employees were forced to re-evaluate their way of dealing with how opportunities within their undertakings and organizations are being handled. The ordinary risks that challenge building employees are struggling to integrate changes in job, deferred contract installment, budgetary disappointment of the owner (client), work and job issues, accessibility of hardware and equipment, profitability of job, faulty equipment, equipment effectiveness, well-being, poor quality of job, unexpected site circumstances, money-related temporary disappointment. In total, there are issues of repeating struggle, customer and partner disappointment from surrendered tasks, and high mishap rates.

Empirical risk management studies in the building industry of small and medium-sized enterprises originate from the created countries, for instance, the United States of America (USA), the United
Kingdom (UK), Canada and Australia (Forseaith, 1993). In addition, most of the previous studies examines and portrays financial administration rehearsals in the spotlight, although there has been little study on measuring danger in the survival of SMEs in the construction segment. There are significant gaps in the writing identified with SME risk management that should be improved in this way. It demonstrates risk management in developing countries in SMEs, especially in traveling economies, for instance, Ghana was not explored and experimental data was not provided. This lack of observational evidence from developing economies and the lack of risk assessment on the survival of SMEs are actual gaps in risk management in the construction industry sector of SMEs. Having regard to previous study findings and recognition of these problems, a risk management inquiry in the building industry is legitimized and an evaluation of risk management practices should be established and tested using emerging economies ' empirical information. The review will assess the risk management practices of SMEs in Ghana's building industry.

1.2 Statement of the Research Problem

The unpredictability of building operations and the dangerous circumstances lead to bad project execution, especially among the small and medium-sized enterprises with important economic engagement (Renault et al., 2018). The small and medium-sized enterprises have thus been viewed as an essential method of administration in order to fulfill the task goals as far as time, price, quality, safety and natural sustainability are concerned. As seen by Kululanga and Kuotcha (2010), comparatively low application in practice of formal project risk management techniques contributes to bad results in the construction industry. Therefore, this research suggests that knowledge of risk management procedures could be a step in implementing formal project risk management and a critical factor. This could have a beneficial effect on the general performance of building organisations in Ghana, given that, as Frimpong et al. (2003) and Agyakwa-Baah
(2007) have pointed out, narrative evidence recommends that some building companies in Ghana do not perform risk assessment and management methods as part of project management. Additionally, Kululanga and Kuotcha (2010) draw attention to the benefits that may accumulate when an organization changes its behaviour. Consequently, it could be deduced that, if measures were put in place, the components distinguished from the above examinations as causing delays in the Ghanaian building sector could be reduced. These measures, such as the implementation of methods in risk management, will only be impacted if the awareness of the advantages to be achieved is raised. Risk management can assist small and medium-sized enterprises in the construction industry identify important risks that could have an effect on their achievement or life in time (Falkner and Hiebl, 2015). Although risk management studies in the Ghanaian construction industry have been carried out, not much has been performed specifically on SMEs’ risk management procedures in the building sector. Yirenkyi-Fianko and Chileshe (2015) hypothesized that in Ghana, more than 50 percent of risk management methods were aware with only a third actually using them. Examining the risk management procedures of SMEs in the building industry is therefore essential.

1.3 Research Objectives

The objectives of this study are:

1. To explore the level of awareness of risk management practices by SMEs in the construction sector.

2. To explore the extent of application of risk management practices by SMEs in the construction sector.

3. To explore the potential benefits of risk management practices to the SMEs in the construction sector.
1.4 **Research Questions**

1. What is the level of awareness of risk management practices by SMEs in the construction sector?

2. What is the extent of application of risk management practices by SMEs in the construction sector?

3. What are the potential benefits of risk management practices to the SMEs in the construction sector?

1.5 **Significance of the Study**

Risk management is of excellent significance to project stakeholders (contractor, customer and advisor) as it will minimize the potential for conflicts, disputes, price and time overruns, abandonment, disputes, and quality-related problems related to the building project. Implementing efficient risk management practices up and down the supply chain will enhance the level of achievement of bids, profits, project cash flow, security record, business continuity, and decrease contingencies. Risk management is about achieving outcomes with some degree of certainty and competitive advantage.

Risk management will assist project stakeholders (customers, consultants and contractors) in achieving cost, time, quality and security goals of projects. It will assist society and economies reach cost-effective and efficient projects that create fresh company possibilities and generate more for individuals, investors and government. It will certainly contribute to the growth of the construction industry in Ghana as risk management factors and competitive advantage are elements of the building process in Ghana that need knowledge.
There are three points of perspective to find the noteworthiness of this inquiry: research, industry and policy formulation.

1.6 Scope of the Study

The study will consider SMEs in the Greater Accra region from the building industry. The explanation for this is the grouping of participants in this region, as well as time limitations.

1.7 Research Limitations

Geographically, the research will consider only SMEs from the building industry from the Greater Accra Region. The reason for this is the concentration and time limitations of participants in these areas. Future studies can be carried out in other parts of the nation.

1.8 Structure of Research Report

Chapter One: Chapter One will display the Research Proposal, including the Background and Introduction to the investigation, the Problem Statement, Research Questions, Arguments for the study, Objectives, Significance and the Scope/Limitations of the Study.

Chapter Two: This will introduce the literature review in an attempt to position the study in an appropriate theoretical framework. Thus it will discuss findings of related researches to this study.

Chapter Three: This chapter will present the methodology to be employed for data gathering as well as the relevant statistical analytical tools that will be employed for analyzing the survey results gathered during the study.

Chapter Four: This section will present the findings from the survey, using the statistical tools and methods chosen for data analyses.

Chapter Five: This chapter will be the concluding chapter, which will present the analysis of the findings, conclusions and recommendations for the study.
CHAPTER TWO

LITERATURE REVIEW

2 Introduction

This chapter takes a look at the elements of Ghana's Small and Medium Scale Enterprise (SME) building industry risk management practice. The chapter is dedicated to reviewing the extensive literature on the concept of SMEs, its role in the building and construction sector's development and risk management practices of the sector.

2.1 The Overview of Small and Medium Scale Enterprises (SMEs)

Small and Medium Enterprises (SME) are the non-subsidiary and self-governing companies that employ fewer than a specified amount of staff, according to the OECD (2005). In his research on risk variables, Jordan et al (1998) defines small and medium-sized enterprises in the construction industry by describing the amount of workers and turnover, stating that SMEs are companies with fewer than one hundred (100) staff and a turnover of less than EUR 15 million. The European Commission (1996), on the other side, introduced the definition for SMEs as companies with less than: 250 staff, turnover of EUR 40 million and assets of EUR 27 million (Abor and Adjasi, 2007).

Area scholars describe SMEs as having less than two hundred and fifty staff, and in Sub-Sahara, this figure is set at around two hundred (200) staff (Ayyagari et al 2005). SMEs comprise firms
with less than five hundred (500) employees in developed countries such as the United States (OECD, 2005).

Based on another basic principle, the International Accounting Standards Committee Foundation (IASCF) (2007) says that, for external customers such as banks and insurance companies, a SME has no government accountability and does not publish general purpose financial statements. It defines SMEs as organizations that do not have the onerous requirement for the issuance of economic tools to submit their financial statements to any legislative body. These companies do not hold property for a group of outside investors in any fiduciary ability, but the owners, who are generally also directors. UNIDO also describes SMEs by providing distinct classifications for industrialized and developing countries in terms of amount of staff (see Elaian, 1996).

- Large enterprises with 500 or extra staff;
- Medium-sized enterprises with 100-499 staff;
- Small-scale enterprises with 99 staff or fewer.
- Large enterprises with 100 or more staff;
- Medium enterprises with 20-99 staff;
- Small enterprises with 5-19 staff;
- Micro enterprises with fewer than 5 staff.

### 2.2 Small and Medium Scale Enterprises – Ghanaian Situation

Accessible information from Ghana’s Registrar General’s Department shows that over 90% of registered establishment falls within the SMEs bracket (Mensah, 2004). This bracket of firms has been acknowledged as the reagent for the development of the country as an important avenue for income and employment. Data on these firms, however, is not readily available. The Ghanaian Ministry of Trade projected in 1998 (cited in Mensah, 2004) that Ghanaian’s private sector consists
of approximately 80,000 listed limited companies and 220,000 enumerated partnerships. This target group is generally described in Ghana as:

1. Micro businesses: those employing up to 5 employees and fixed assets (excluding real estate) not exceeding $10,000,
2. Small businesses: Employ 6 to 29 staff with $100,000 in fixed assets,
3. Medium-sized businesses: engages between 30 and 99 staff with up to $1 million in fixed assets.

Data from the national pension’s institution, Social Security & National Insurance Trust (SSNIT) indicates that the private sector in Ghana is very much tilted by size categories, with 90% of companies employing less than 20 individuals and a small number of big companies. In their research on SME contractors, Eyiah and Cook (2003) acknowledged economic-class 1 contracting firms in Ghana (mainly made up of foreign firms). They realize that while Class 2, Class 3 and Class 4 businesses are not the same based on their financial capacity, they have similar features in the handling of their firms, so they can all be classified as SMEs. However, this definition is accepted for this study.

2.3 The Role of SMEs in an Economy

SMEs play a vital part in the growth and sustainable progress of each country (Moore et al., 2008). In Ghana’s social and economic growth, SMEs have a critical position to play. SMEs are critical to the development of any economy as they have an outstanding job creation potential, enhance local technology, diversify outputs, create indigenous entrepreneurship, and integrate with large-scale industries. The would-be benefits of SMEs to any economy include contribution to the economy in terms of manufacturing of products and services, job creation at relatively low capital expenditure, provision of an income reduction tool and semi-qualified employment as a basis for imminent industrial expansion (Azende, 2012). Despite this, a number of SMEs are important to
many countries and countries, related literature reiterates that SMEs are persistently facing a number of problems and dangers that affect their growth and usually lead to the death of a number of small and medium-sized enterprises. Empirical studies by Longenecker, et al. (2006), indicated that starting and operating a small business includes both the possibility of accomplishment and disappointment, and owing to the small size of small and medium-sized enterprises, a guileless management gaffe is likely to lead to a small enterprise's sure death and therefore no chance to learn from its past mistakes. Lacking planning, insufficient financing, and poor governance were the main causes of failure. The absence of credit and loan facilities was also recognized as one of the most severe limitations facing SMEs and hampered their growth (Oketch, 2000).

2.4 Defining Risk

Risk has been recognized as an inevitable challenge that confronts many SMEs, and if it is not properly managed, it could result in small business failure or collapse. The Small and Medium Cooperative Development Portfolio Committee (2010) stated that risk is the probability that the outcome of an action or incident may have adverse impacts on the business. It is primarily worried with uncertain future occurrences that may affect the accomplishment of the strategic, operational and economic goals of the organization (International Accountants Federation, 1999). Risk can generally be described as any problem that can affect the mission of a business entity and the potential that predictable and unforeseen events can adversely affect assets and income. Gary et al (2002) noted that risk must not only be measured, but also efficiently transmitted and managed throughout the business. Current literature demonstrates that corporate organizations, whether tiny, medium or big, face worldwide risk in their operations (Azende, 2012).
If business development and expansion are to take place, the ability of a company to take risks is required, but the ability to prevent as much misfortune as possible through well-organized risk management is also required.

2.5 Risk Management Concept

Risk management is a key problem for all businesses, especially SMEs, mostly susceptible to corporate risk and competition (Alquier and Lagasse 2006). Implicitly in SMEs, risk management is an essential norm that enterprise or management should concentrate on recognizing imminent insecurity, taking into account risks, potential manifestations and effects, and articulating approaches to addressing these threats and reducing or eradicating their impact on the enterprise.

It is usually agreed that the risk management process involves four interrelated steps including risk identification, quantification and risk analysis, risk management and risk control, and ongoing risk development reporting (Vaughan and Vaughan, 2001). Similarly, Smallman (1996) claims that holistic risk management is associated by three primary elements, including continuous monitoring of all risk sources, juxtaposing qualitative and quantitative methods, risk assessment as well as surveillance, and organizational learning for a positive attitude to the management, assessment, analysis of risk (Halman and Weiden, 1997).

2.6 Risk Management and SMEs

According to Matthews and Scott (1995), many SMEs do not have an explicit image of company danger and often their risk management is not well organized or systematic. Henschel (2008) argues that absence of knowledge and knowledge in SMEs can pose a huge financial danger to SMEs. SMEs recognize two obstacles to risk evaluation, such as time constraints and access to appropriate directives, according to O'Hara et al (2005). Henschel (2008) observed in his research
that SMEs can expand risk assessment competently provided access and appropriate regulation and aid.

Ntlhane (1995) claimed that few SME owners and executives are conscious of the risks and generally concentrate their risk behavior on "loss control" activities in fire, safety, health, and quality assurance fields. Therefore, the "loss control" activities are managed by either the businessman or key executive along with their other responsibilities, improving the likelihood of mismanagement as there is no appropriate time expended on risk management duties. Since SMEs do not undertake structured risk identification, SMEs believe that their restricted economic resources are exposed to unconscious or unplanned danger. Ntlhane (1995), went on to say that dangers remain unmanaged in most SMEs until they surface and only then can SMEs act to tackle them. Accordingly, control measures implemented to counter risk fail to be reactive and non-automated. The research found that the focus of entrepreneurial behavior is to avoid danger rather than to develop techniques of risk control. Risk avoidance has the impact of hampering financial advancement in a company as every company can thrive and grow if it can take advantage of company possibilities that often pose higher hazards.

In connection with these research by Janney and Dess (2006), it was observed that SMEs do not implement a favourable strategy to risk leadership owing to limitations such as insufficient internal systems, limited organizational and technical knowledge, lack of the monetary and intellectual resources to generate important technological progress and change, weak data networks to locate and recognize data. Similarly, a Turpin research (2002) says that most SMEs do not have an official risk approach due to communication problems with delegating risk management skills to staff. His research further states that growing competition, low skills for companies, changing
client requirements, incorrect strategies owing to absence of relevant market data and private absences are common and most importantly risk to SMEs.

Previous study findings indicated that the attitude of small and medium-sized businesses towards hazards and their risk evaluation differed considerably from big businesses. Risk leadership procedures in tiny businesses are related to owner / manager dogmas and attitudes. SMEs are not inclined to use separate techniques to increase single hazards. SMEs make decisions not in terms of handling particular hazards, but in terms of their company as a unit. Despite the reality that some type of risk detection and assessment has been carried out by SMEs, small business owners can simply ignore a specific risk (Sparrow, 1999). However, in big companies, the responsibility for risk management is revealed to be mainly the board of directors and secondly a unique risk manager (likely leading a distinct risk management function). In addition, inner audit is accountable for overseeing and reviewing risk management in more than half of big companies. As far as risk identification and evaluation is concerned, big companies generally name chosen employees of company units, followed by management and risk executives (PwC, 2000).

KPMG (2000) discovered that 77% of all big companies have directly integrated risk management into their project planning. Most big companies make investments from EUR 50,000 to EUR 250,000 for their risk management scheme (Fischer; 1999). Infrastructure contracting procedure is often deemed a risky business, and researchers around the globe have fixated on handling construction-related hazards (Öztas and Ökmen, 2003). This means that risks cannot be overlooked; the success or failure of a construction project can rely solely on how well risk is managed. This means that risks cannot be ignored; the success or failure of a project can rest chiefly on how well risk is managed. Building companies are therefore constantly seeking measures to guarantee a profitable trade-off between project risks and opportunities (Thevendranet
16

al 1998). Project management literature describes the extensive and frequently accepted risk management technique. Improbability of a dangerous case and the likelihood of occurrence or impending effect must be reduced by selecting the appropriate risk mitigation. There is enhanced difficulty in forecasting a project's final outcomes, which means that contractors are unable to predict with absolute conviction that a construction project will end within their estimates of moment and cost. This underscores the worldwide search by most building firms for risk management methods, instruments and processes.

According to Nworuh and Nwachukwu (2004), the following sources of risk predominate in building projects; risk of mistake in estimation, risk of time overrun induced by customers and their agents, nominated subcontractors / nominated suppliers; risks due to inclement weather, risk of economic failure of customers, uncertainty connected with cash flow issues and industrial rehabilitation. Therefore, a need arose to better understand what contractors term risk and uncertainty in these peculiar environments as a prudent step to investigate such risks and mitigate their negative impact on defined project goals.

2.7 Risks in Construction Projects

From the research work of Ogunsami, Salako and Ajayi (2011), risk has been claimed in all aspects of human life and as such construction projects are no exception to this since they are defined by activities that are prone to multiple types of risks ranging from political to building danger. Odeyinka (2006) defined building hazard as a variable of buildings whose change orders lead to uncertainty about the final price, length and specification of the project. Cost overruns, time overruns, bad quality, and conflicts between parties to a building agreement are common implications of project hazards. Project-specific risks are inter-active and sometimes cumulative, affecting project-related costs and advantages (Smith 1999).
Additionally, hazards arise in construction projects from a plethora of sources; environmental / policy; health and safety hazard; market conditions; and engineering / functional origins. Fong (1987) indicated that these generally acknowledged sources of danger in the construction industry are constantly faced with a variety of situations involving many unidentified, often unwanted and often unpredictable variables, including timing of project tasks, technological issues, people-oriented issues, finance, management and political issues (Lockyer and Gordon 1996). In reference to Osama and Salman (2003), building hazards that have been identified includes where the project exceeds its budget and endangers the company's economic health, time and design-related hazards. Various study studies have usually shown that the final contract sum often differs from the scheduled quantity budgeted for in the contract when implementing the construction project.

This risk are likely to be triggered by either a reduction or an increase in the initial contract amount and is sometimes arising from the complicated nature and completion time needed for project execution. Risk management scheme used in projects was primarily based on a qualitative assessment, but this method does not enable the recording of hazards, problems and actions taken to address them, as well as lessons learned so that they can be used to develop fresh projects (Hubbard, 2009).

### 2.8 Conceptual Framework

Risk can be managed, minimized, shared, transferred or accepted, but risk cannot be ignored (Latham 1994). To the owner of a firm, the relevance of risk management is such that it can influence whether to undertake the project or not. Unforeseen dangers to a contracting firm may result in unrecoverable losses. In brief, over-emphasizing the need for a good leadership scheme is inevitable.
Figure 2.8: A Risk Management Process

Figure 2.8 is a portrait of a typical sequence of risk management process. In construction, the process occur throughout the stages of project development namely inception, design, construction and completion. The introductory part is the Planning Stage and concluding part is Reporting Stage. In between these two stages are the four main RM practices that occurs over a construction project duration. The RM practices include:

- Risk Identification
- Risk Assessment
- Risk Response
- Risk Monitoring
2.8.1 Risk Identification

Risk identification is an intentional systematic attempt to recognize and document the main hazards of the company. The goal of risk detection is to comprehend what is at stake in the context of the explicit and implicit goals of the company and to produce an extensive risk inventory based on threats and occurrences that could discourage, degrade, delay or improve the accomplishment of the goals.

2.8.2 Risk Analysis and Assessment

Numerous tools are used to evaluate whether the amount of danger is high or low, such as the probability of an unwanted case, the degree of gravity, and if it happens, the subsequent impact. When people talk about danger, one or more of these risk criteria may be involved. Therefore, to define the danger, a multi-criteria structure is required.

Referring to Williams (1993), concept of risk is split into two main facets: (a) the likelihood of an unwanted case, such as project delay, and (b) the impact, which is the degree of gravity and the measure of the impact on other activities if the unwanted occurs. Mathematically, a risk can be described as follows:

\[ R = PI \]

where

- **R** is the degree of risk, within \([0, 1]\),
- **P** is the probability of risk occurrence; within \([0, 1]\),
- **I** is the degree of risk impact defined as within \([0, 1]\);
From the risk equation described above, it can be seen that the degree of risk is close to 0 if a risk factor has little or no impact. On the other hand, if a risk factor has a strong effect and a high probability of occurrence, its amount of risk is very large, close to 1.

2.8.3 Risk Response

According to Smith (1999), it is necessary to undertake to suggest particular countermeasures for each of the recognized hazards after classifying all hazards that arise or may happen in the project activities. These responses can be split into four primary groups:

- **Risk Acceptance** – including acceptance at a particular stage of project risk. We recognize all the implications resulting from both absence of time and economic resources.

- **Risk Transfer** – this involves the transfer of risk to another entity that has the ability to neutralize risk. One form of transfer is a direct transfer of losses effects to another entity. Classic example of risk transfer is the use of insurance products such as bid bonds, performance guarantee and retention bonds.

- **Risk mitigation** – this involves actions that lessen the probability of a risk occurring and how to overcome the effects of the crystallized risk. This involves the creation of management reserves to deal with the risk mitigation.

- **Risk Avoidance** - According to Gajewski & Ropel, 2011, Risk avoidance is the process of trying to eliminate risks by looking at alternatives in the project. Altering the project scope is an example to do it. If the cost to avoid the risk is less than the expected impact then is a good solution. This confirms the assertion that risk management should be incorporate in the early stages of a project.
• **Risk Acceptance** – Risk acceptance is also known as retention and is the decision to recognize and support the consequences of a risk when it occurs. Rodríguez (2012) posited that risk acceptance will work with very small risks that are unlikely to happen. It is necessary to understand the risks and their consequences and probabilities of occurrence. If risks have been accepted, then contingency plans should appear, normally in the budget or in the schedule.

2.8.4 **Risk Monitoring**

Risk monitoring aims at observing, ensuring compliance, measuring, taking corrective actions, as defined in the risk management plan. It encapsulate the implementation, compliance and management of risk response plans; control the risks; update the risk register; performance of additional risk identification, analysis and response panning and reporting (Mulcahy, 2010).
CHAPTER THREE

RESEARCH METHODOLOGY

3 Introduction

In this chapter the research methodology adopted for this study discussed to aid in analyzing the risk management practices of SMEs in the building construction space in Ghana. The Chapter takes a look at the research strategy, design and processes. It also covers the methods and procedures used in the collection of field data. It states details to each of the methods deployed and how their adoption were used to report the outcomes of the study.

The aim of the research methodology is to provide guidance in planning and carrying out the study in a manner that is seeks to accomplish desired objectives. The methodology for conducting the research is a blueprint. Similarly, it is referred to by Polit and Hungler (1985) as the method of adhering to the measures, processes and strategies for collecting, evaluating study information and reporting. These techniques explain how to conduct the research in detail.

Methodology, according to Burns & Grove (1987), involves in a study layout, setting, sampling, methodological restriction and methods for collecting and analyzing information. It is the know-how to acquire the valid understanding of the science methods and techniques used. So methodology is the way we acquire world understanding, attempting to explore about the assignment of figuring out an established phenomenon (Christou, et al., 2008).
3.1 Research Strategy

Research strategy can be described as how to question the study goals (Naoum, 1998). There are two kinds of approaches for studies that is quantitative and qualitative (Naoum, 1998). As implied, quantitative data consists of arithmetical information (Polit & Hungler, 1985). Quantitative research is best describe as objective in nature. Given the conditions it is chosen: the desire to discover information on a notion or a phenomenon. As a way of testing a theory or hypothesis, you want to gather valid proof and study the connection between the data (Naoum, 1998). In essence, qualitative research is "subjective" (Naoum, 1998). It emphasizes meanings, experiences, description (often described verbally), etc. The qualitative data comprises of thorough commentary of individuals, occurrences, events, or conduct observed (Polit & Hungler, 1985). It is useful and handy when you have restricted understanding on subject (Naoum, 1998).

Due to well established benefits, the approach used in this thesis is quantitative research.

3.2 Research Design and Process

Research design is the study blueprint, framework, and tactics designed to provide responses to study issues and control variance. The strategy is the whole study system. It involves a summary of what the researcher will do from writing to the conclusion the hypotheses and their operational consequences. Given the variety of distinct approaches to research, categorizing kinds of studies is useful. An approach to case study has been adopted. A case study is a research approach aimed at a holistic comprehension of sets of interrelated operations that actors are involved in in a social scenario (Kwawu 2009). The study design's aim is to provide the study issue response plan (Wood & Haber, 1998). A lot of social science and leadership research includes asking and acquiring responses to issues by conducting individual surveys using survey questionnaires and case studies
(Fellow and Liu, 1997). For their benefits in this studies, a structured questionnaire with some private consultations will be jointly used (Sawalhi, 2002). Arguably, the commonly used information collection method for conducting surveys to discover facts is the structured questionnaire (Naoum, 1998).

On the other side, the research method discusses tools, techniques and processes for information collection. It offers comprehensive explanations for every techniques used and their adoption to tackle the study issues. The study depicts a quantitative approach and adopts a study survey questionnaire preceded by thorough analysis and interviews with literature. Due to the need to generalize the results across the construction industry, a survey questionnaire is chosen. Per Oppenheim, 1996, it enhances observation accuracy and increases replications due to the intrinsic standardized sampling and measurement processes.

### 3.3 Data Collection and Instrument

#### 3.3.1 Data Sources

The adopted data gathering strategy includes desktop survey and field survey. A key element of the study is the desk survey that involves reviewing associated literature and collecting information through interviews and conversation with distinct economic classes of contractors as it sets the pace for developing research tools using survey questionnaires and interviews. Field survey deals with empirical information collection by means of survey questionnaires. Having carried out a comprehensive review of the literature and placed the research within its theoretical framework, survey questionnaire was used for the research.
3.3.2 Questionnaire Design

For its benefits, closed-ended questionnaire was deployed such as: it is simple to solicit and fast to reply, it does not involve the respondent to write, and their assessment is straightforward (Naoum, 1998). Through a thorough literature review, risk management methods of SMEs were described. These factors have been converted into clear format and void of technical terms to minimize prospective respondent mistakes. Questions of comparable subjects were taken from prior research and grouped together to construct the draft questionnaire's primary regions.

The questionnaire was split into four primary fields: It commences with the demography of the participants and the next was about RM instruments and techniques knowledge. The third chapter was about the use of the respondents' RM instruments and methods and the final chapter was about the prospective advantages from respondents' use of RM. Closed issues were sections one to three. However, participants in the fourth chapter had to show their level of agreement on the effect of RM procedures on the results of the adopted building project. A Likert rating scale of four points (strongly agree=4, agree=3, disagree=2 and strongly disagree=1).

3.3.3 Contents of the Survey Questionnaire

Traditionally, the worth of the answers and response rate is influenced by the nature of issues and how questions are articulated and submitted. Therefore, it was essential to guarantee that the correct questions were asked, understood and answered in the correct manner.

The survey questionnaire includes four primary parts (refer to Appendix I). The immediate section is an introductory to explain the subject and objective of the study and includes questions 1 to 4, which are consistent with general data issues including the contractor's economic class, the nature of customers, experience, number of individual company employees. The respondent is asked to select the most suitable response. The second chapter of the questionnaires includes 1 to 6
questions aimed at identifying respondents' level of consciousness of RM practices and training in risk management. The third chapter asks 2 questions about the level of implementation in respondent company activities of risk management procedures. The final sections invite participants to show their level of agreement on the building project’s 8 prospective advantages of RM practices.

The questions are in a uniform sequence and format. This ensures that in each questionnaire each question is requested the same fashion, at the same time, it was easy to run the questionnaire and comparatively less tedious to evaluate and gather. Accordingly, the reference frame is indicated for reaction and this improves the opportunity to obtain responses appropriate to the investigation.

3.3.4 Scope of Survey Questionnaire

The study was geographically restricted to Accra (capital city of Ghana), due to its strategic roles and significance in Ghana's annals. According to (Ahadzie, 2007; Ayisi, 2000), given that financial development is mainly skewed towards capital, over 60% of registered construction companies tend to work in the Greater Accra area formally. Another reason to limit the study to Accra was incorporated into the capital city's escalated building operations.

3.3.5 Instrumentation and Sampling

The main sampling technique for self-reporting measure is purposeful sampling—helpful in choosing participants and instances with wealthy data on the phenomenon being studied (Patton 1987). Thus the choice of respondents were the owners of SME construction companies. This based on the fact that most SMEs are owner managed and have experience in decision making. Sampling is the method of choosing participants and instances from a population of concern, and two kinds of sampling method. Random non-random sampling methods are available (Trochim
2001). Purposive sampling technique also referred to as judgmental sampling, is a type of non-probability sampling technique. As proposed by Dillman (2000), the survey questionnaires were piloted by selected construction professionals in Accra, Ghana. On the strength of the results and comments from the assessment, the pretested questionnaires were evaluated and the revised. It was lastly administered the revised questionnaires. For the study, 60 contractors were purposefully selected in the D2K2-D4K4 registration category within Accra from the registered building and civil contractors’ database of MWH.

3.4 Data Preparation and Statistical Applications

3.4.1 Data Preparation
There are two steps to achieving this: first, collecting and processing the fresh information in a form appropriate for evaluation (information categorization) and second; defining a test method for using the statistical instrument and using the data. Deploying the use of standard package for social science and micro soft excel, the data was parceled in an appropriate format for analysis after the data was collected.

3.4.2 Statistical Considerations
The survey data will be subjected to frequency and descriptive statistics
CHAPTER FOUR
DATA ANALYSIS AND DISCUSSION OF RESULTS

4 Introduction

This chapter is an extension of chapter three works on the research methodology used, presenting the data of the survey and discussing the results obtained. The analysis consists of respondents’ profile, descriptive statistics, ranking of potential advantages of SME construction contractors’ RM practices.

4.1 Profile of Respondents
4.1.1 Financial Class of Firms
The Ministry of Works and Housing (MWH) has classified contractors with Class 1 – 4. As earlier state in this paper, the Classes 2 – 4 possesses the characteristics of SMEs. Class 1 are generally large construction firms and have financial capacity for contractors over $500,000. The Class 2 have up to $500,000 with Classes 3 and 4 being $200,000 and $75,000 respectively. Table 4.1 posits that Classes 3 and 4 recorded 28 responses with combined percentage of 56.52. This suggests that more than half of the respondents are SMEs with financial capacity for contracts up to $200,000 with 43.48% being of the class with financial capacity of up to $500,000.

Table 4.1 – Financial Class of SME Contractors as certified by MWH

<table>
<thead>
<tr>
<th>Financial Class certification</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2/K2</td>
<td>20</td>
<td>43.48</td>
</tr>
<tr>
<td>D3/K3</td>
<td>14</td>
<td>30.43</td>
</tr>
<tr>
<td>D4/K4</td>
<td>12</td>
<td>26.09</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>

University of Ghana http://ugspace.ug.edu.gh
4.1.2 Clients of Firms

Customers in the construction industry are very significant stakeholders. They hire most of these SMEs construction contractors and therefore they need to define the customer type with which most of them operate. The outcome in Table 4.2 shows that 60.87% of the total participants operate with both private and public / government. Only 2.17% of contractors work only with public authorities and 36.96% work only with private clients. Therefore, it can be deduced that 63.40 percent of the contractors answered are working with public clients. However, this shows that Ghana's public / government is the leading employer in the construction sector. This is underpinned by Eyiah and Cook (2003) when it was identified that government was as a major client in Ghana.

Table 4.2 – Types of Clients SME Contractors work for

<table>
<thead>
<tr>
<th>Types of Clients</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>17</td>
<td>36.96</td>
</tr>
<tr>
<td>Public</td>
<td>1</td>
<td>2.17</td>
</tr>
<tr>
<td>Both</td>
<td>28</td>
<td>60.87</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>

4.1.3 Period of Operation of Firms

The respondents' experience is very essential for the reliability of this survey's results. Therefore, it was essential to define the respondents' background knowledge. Table 4.3 shows that 17.39% of contractors have 5-10 years of work experience and 23.91% have 10-15 years of work experience. 30.43 percent of contractors have less than 5 years of building experience. It is also worth noting that 28.26 percent of contractors have over 15 years of experience. The results show that 69.57% of participants have more than five years of work experience.
Table 4.3 – Experience of SME Contractors

<table>
<thead>
<tr>
<th>Period of Operations</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5 years</td>
<td>14</td>
<td>30.43</td>
</tr>
<tr>
<td>5 - 10 years</td>
<td>8</td>
<td>17.39</td>
</tr>
<tr>
<td>10 – 15 years</td>
<td>11</td>
<td>23.91</td>
</tr>
<tr>
<td>Over 15 years</td>
<td>13</td>
<td>28.26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.1.4 Number of Employed Workers

Another very significant factor for this study was the number of employed employees. The amount of employed employees has a connection with the company's size and demonstrates whether or not contractors are growing. Stoke and Wilson (2006) support this statement in defining SMEs by employed workers’ headcount. The outcome of the study suggests that 60.87% of the respondents employs less than 50 permanent workers. Only 39.13% employs more than 50 permanent workers.

Table 4.4 – Number of Employees of SME Contractors

<table>
<thead>
<tr>
<th>No. of Employees</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 200</td>
<td>7</td>
<td>15.22</td>
</tr>
<tr>
<td>50 - 199</td>
<td>11</td>
<td>23.91</td>
</tr>
<tr>
<td>20 - 49</td>
<td>15</td>
<td>32.61</td>
</tr>
<tr>
<td>0 - 19</td>
<td>13</td>
<td>28.26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.2 Awareness of Risk Management Practices

An examination of tables 4.5 and 4.6 reveals that the awareness of risk management concept exhibited by the SME owners is 91.30% with only 8.70% not actually aware of the concept. Contrary to the assertion of Akintoye and Macleod (1997), even though the concept is rather new, most of the SMEs studied aware of it. On the level of awareness of the concept, 89.13% of the respondents are either extremely or somewhat aware with only 10.78% not being so aware of the risk management practices.
Table 4.5 – Awareness of Risk Management Concept by Owners of SME Contractors

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>42</td>
<td>91.30</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>8.70</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.6 – Level of awareness of RM Concept by Owners of SME Contractors

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely aware</td>
<td>17</td>
<td>36.96</td>
</tr>
<tr>
<td>Somewhat aware</td>
<td>24</td>
<td>52.17</td>
</tr>
<tr>
<td>Not so aware</td>
<td>5</td>
<td>10.87</td>
</tr>
<tr>
<td>Not at all aware</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>

4.2.1 Training of SME Owners and Employees on Risk Management

Training on RMP conducted for SME owners and employees is a pivot for the actualization of the potential benefits of the concept to their businesses. The survey results in table 4.7 shows that of respondents studied, 50% of the owners have received training is risk management. Given the nature of SMEs being owner managed, the knowledge on RM is crucial to their survival and productivity. From table 4.8, 60.87% of respondents confirmed the training of their employees in risk management. This is vital for business planning and success as well as continuity.

Table 4.7– Training on RM received by Owners of SME Construction Firms

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>23</td>
<td>50.00</td>
</tr>
<tr>
<td>No</td>
<td>23</td>
<td>50.00</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 4.8– Training on RM received by Employees of SME Construction Firms

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>28</td>
<td>60.87</td>
</tr>
<tr>
<td>No</td>
<td>18</td>
<td>39.13</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>

4.3 Application of Risk Management Practices

One of the key objectives of this study is the assessment of the level of application and usage of the risk management practices by the SME contractors. On the question of application of knowledge acquired from Risk Management training in their business operations, 65.22% of the respondents answered in the affirmative with 34.78% not applying acquired knowledge in their operations as shown in table 4.9. This finding is also compatible with literature in developing economies. The research of Akintoye and MacLeod (1997) in Nigeria also discovered the ability of the contractor to manage the risk assessment significantly. From table 4.10, 28.26% of the SME contractors always apply risk management practices, 36.96% of them sometimes use these practices in their operations. 34.78% of the respondents rarely or never use any of these practices in their operations. As Agyakwa-Baah (2009) noted, contractors should be made aware of the advantages of implementing project risk management procedures.

Table 4.9– Application of RM training in Business Operations

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>65.22</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>34.78</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 4.10 – Frequency of application of RM practices by Owners of SME Firms

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>13</td>
<td>28.26</td>
</tr>
<tr>
<td>Sometimes</td>
<td>17</td>
<td>36.96</td>
</tr>
<tr>
<td>Rarely</td>
<td>14</td>
<td>30.43</td>
</tr>
<tr>
<td>Never</td>
<td>2</td>
<td>4.35</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.4 Benefits of Risk Management Practices

From table 4.11, the four most important benefits to be derived from the implementation of RMP in the construction sector by SME contractors were as follows:

1. Reduction of accidents on site
2. Deliverable attains required quality
3. Projects are completed on time
4. Improved public perception.

Table 4.11 – Ranking of the potential benefits of RMP

<table>
<thead>
<tr>
<th>Potential Benefits</th>
<th>Mean Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects completed on time</td>
<td>3.15</td>
<td>3</td>
</tr>
<tr>
<td>Project completed within budget</td>
<td>3.11</td>
<td>5</td>
</tr>
<tr>
<td>Deliverable attains required quality</td>
<td>3.17</td>
<td>2</td>
</tr>
<tr>
<td>Reduced accidents on site</td>
<td>3.24</td>
<td>1</td>
</tr>
<tr>
<td>Reduction in production time</td>
<td>3.11</td>
<td>5</td>
</tr>
<tr>
<td>Improved public perception</td>
<td>3.13</td>
<td>4</td>
</tr>
<tr>
<td>Potential Benefits</td>
<td>Mean Score</td>
<td>Rank</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td>Reduction in contractual claims</td>
<td>3.11</td>
<td>5</td>
</tr>
<tr>
<td>Improved team morale and productivity</td>
<td>3.02</td>
<td>8</td>
</tr>
</tbody>
</table>

### 4.4.1 Reduction of Accidents on Site

The prevalent approaches to improving safety in the construction industry have placed the burden of accountability on the contractors for the safety of the employees. This becomes a risk that the SME contractor needs to manage. The application of the relevant RMP has the propensity to reduce accidents on site and improve the overall safety of workers. Given a mean score of 3.24, respondents ranked reduction in site accidents as the most prominent potential benefit of the implementation of risk management practices by SMEs in the construction sector. This is endorsed by Ahmed et al. 2000 in their research on enhancing building safety, which remains a concern in nearly every nation in the globe, as the construction industry stands out as the primary contributor to serious and fatal accidents among all other sectors.

### 4.4.2 Deliverable Attains Required Quality

Construction project deliverables are certified based on the attainment of the specified deliverable. In the view of the respondents it is an important benefit of RMP in the delivery of quality products. It can therefore be inferred that the application of risk assessment could lead to the identification of adequate mitigation measures to solve quality-related problems. Wang et al (2004) also recognized inadequate quality control due to defect tolerance and poor quality of the local partner. Risk occurrences in developing nations such as Ghana are prevalent owing to competitive bidding resulting in the highest bid being chosen. This has a knock on impact that affects the length of the project and the price of the project and job quality.
4.4.3 Projects are Completed on Time

Timely project completion is a dependent variable that can be determined by multiple independent variables. It has become a critical success factor in project delivery (Sarkodie-Poku, 2013). Projects being completed on time as a potential benefit of risk management practices by respondents was ranked third with mean score of 3.15. With timely completion of projects as per contract agreement, contractors are able to avert the risk of delay penalty and Liquidated Ascertained Damages (LAD).

4.4.4 Improved Public Perception

SME contractors ranked this fourth with an average rating of 3.13. This is an exciting development, given that over 60% of respondents work for government agencies; therefore, the problem of public perception should be high on the agenda of government organizations, since they also finance some of the projects. By this rating, small and medium-sized enterprises show that risks can dent their corporate image, hence the need for risk management and reap advantages.
5 Introduction
This chapter emphasizes the summary, limitations of the study, conclusion and the proposed recommendations to better the lot of the SMEs in the construction space of Ghana to play its prominent role in the economic development of the country.

5.1 Review of the Research Objectives
As a reaffirmation of what was previously mentioned in chapter one of this research, the general objective of this research is to evaluate the risk management practices of SMEs in Ghana’s building industry. To accomplish this overall objective, the research set three specific goals. To accomplish these goals, questionnaires for literature review and survey were performed.

5.1.1 Objective One: To explore the level of awareness of risk management practices by SMEs in the construction sector.
To this effect, available literature was review to assess the level of awareness of risk management practices. The literature review posited that more that 50% of SMEs in the construction sector generally were aware of these practices. This assertion was largely confirmed from the results of the survey questionnaire. The results indicated that over 90% of the SME contractors surveyed were aware of the risk management practices in their line of businesses.

5.1.2 Objective Two: To explore the extent of application of risk management practices by SMEs in the construction sector.
Given the result of the level of awareness of the risk management practices being well over 90%, 
the achievement of this objective as obtained from the results of the survey indicated usage level 
of 65.22%. This corroborated by the findings of Yirenkyi-Fianko and Chileshe (2015).

5.1.3 Objective Three: To explore the potential benefits of risk management practices to 
the SMEs in the construction sector.

To this effect, the SMEs building contractors were allowed to rank the identified potential benefits 
of risk management practice from a scale of 1 to 4. Per the results, the four most important benefits 
to be derived from the implementation of RMP in the construction sector by SME contractors were 
as follows

- Reduction of accidents on site
- Deliverable attains required quality
- Projects are completed on time
- Improved public perception.

5.2 Research Limitations

Some study constraints need to be recognized. The sample was taken from building organizations 
in the Greater Accra region that fell within Class 2 – Class 4 as certified by the Ministry of Works 
and Housing. This sample may not be representative enough to warrant national generalization of 
the findings.

5.3 Conclusion
The above findings appear to show that risk management practices application is still at reduced concentrations in SMEs due to reasons. The level of training which per the study 50% is for the business owners leaves much to be desired. It can also be found that risk management in small and medium-sized enterprises is primarily focused on owners / managers beliefs that seriously hamper sustainable business development. The level of awareness is well documented, however the application of the practices which is about 60% is far less than the awareness level of over 90%.

5.4 Recommendations and Policy Directions

The following recommendations are submitted towards the deepening and enhancement of Risk Management Practices among the SMEs in the construction space of the country.

5.4.1 Recommendation for SME Contractors

In Ghana, the Association of Building and Road Contractors is the umbrella body the SMEs operating in the construction industry of Ghana. This body can partner the training institutions to run refresher courses and training programmes in risk management for their members. This will lead to the building of the capacities of these firms in risk management practices. Additionally, professional bodies with the built environment space including Ghana Institution of Surveyors, Ghana Institute of Architects and Ghana Institution of Engineers can as part of the Continuous Professional Development include modules on risk management practices.
5.4.2 Recommendation for Policy Makers

The importance of SMEs in the construction has been underscored. Considering the potential of this sector towards the economic development of the country in engendering employment creation, it is imperative for government and policy makers to assist SMEs in this sector to maximize the benefits of risk management practices in their operations. Specific policy interventions can be made to build the capacity of these firms to manage their risks.

5.4.3 Recommendation for Academia

Academic institution have a role to play in assisting SMEs in the construction space of Ghana to manage their risk and attain the benefits thereof. Curriculum development for entrepreneurs and construction players should include risk management practices to help build the capacity of the entrepreneurs in the construction sector. This will go a long way to deepen the awareness and usage of the tools and techniques for risk management.

5.5 Recommendation for further studies

Considering the limitation of this study, it is recommended that further studies are conducted in other parts of the country to enhance the possibility of generalization from the findings of the research.
REFERENCES


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Ntihane, K.E., (1995). *The application of risk management principles to smaller enterprises*. A research report submitted in partial fulfillment of the requirements for the degree of Masters of Business Administration in the Faculty of Management at the University of the Witwatersrand


APPENDIX

Survey Questionnaires for Managing Directors of SME Contractors

ANALYSIS OF RISK MANAGEMENT PRACTICES OF SMALL AND MEDIUM ENTERPRISES (SMEs) IN THE CONSTRUCTION SECTOR OF GHANA

INTRODUCTION

This questionnaire forms part of MSc. (Development Finance) research project being undertaken by Isaac Sarkodie-Poku of the University of Ghana Business School, Legon. The essence of this questionnaire is to explore the level of awareness, usage and the potential benefits of risk management practices by SMEs in the construction sector of Ghana.

The expected outcome of the research is to help provide a comprehensive data on the risk management practices for SMEs in the construction sector of the country for use by the industry, policy makers and the academia.

In view of this, I would be very grateful if you could please answer the questions that follow.

SECTION A - BACKGROUND

1. Indicate the class of your firm as certified by the Ministry of Works and Housing (MWH)
   i. D2/K2  ( )
   ii. D3/K3  ( )
   iii. D4/K4  ( )

2. Please indicate the clients you work for
   i. Private  ( )
   ii. Public  ( )
   iii. Both  ( )

3. How many years has your firm been operating in the country?
   i. Less than 5 years  ( )
   ii. 5 – 10 years  ( )
   iii. 10 – 15 years  ( )
   iv. Over 15 years  ( )

4. Please indicate the average number of workers in your firm.
   i. Over 200  ( )
   ii. 50 - 199  ( )

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iii. 20 - 49 (   )
iv. 0 - 19 (   )

SECTION B – AWARENESS OF RM TOOLS AND TECHNIQUES

Are you aware of risk management tools and techniques used in the management of construction business?

i. YES (   )
ii. NO (   )

SECTION C – USAGE OF RM TOOLS AND TECHNIQUES

Has your firm used any of the risk management tools and techniques used in the management of construction business?

i. YES (   )
ii. NO (   )

SECTION D – POTENTIAL BENEFITS OF RM PRACTICES

Please on the scale of 1-4, kindly rank the following potential benefits that could accrue to the firm that uses RM practices in the management of its construction business.

<table>
<thead>
<tr>
<th>Potential Benefits of Usage of RM Practices</th>
<th>Ranking</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects completed on time</td>
<td>1</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>Projects completed within budget</td>
<td>2</td>
<td>Disagree</td>
</tr>
<tr>
<td>Deliverable attains required quality</td>
<td>3</td>
<td>Agree</td>
</tr>
<tr>
<td>Reduced accidents on site</td>
<td>4</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>Reduction in production time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved public perception</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduction in contract claims</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved team morale and productivity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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