

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

**EXPLORATORY STUDY OF THE COMMITMENT OF TOP MANAGEMENT OF
CONSTRUCTION FIRMS TOWARDS HEALTH AND SAFETY OF WORKERS**

BY

EZEKIEL KUMI (Bsc. Hons.)

7161190011



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requirement for the award of Master of Technology Education in Construction
Technology**

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DECLARATION

Candidate's Declaration

I **EZEKIEL KUMI** hereby declare that this dissertation is the result of my own original work and that no part of it has been presented for another degree in this University or elsewhere.

Candidate's signature

Date:

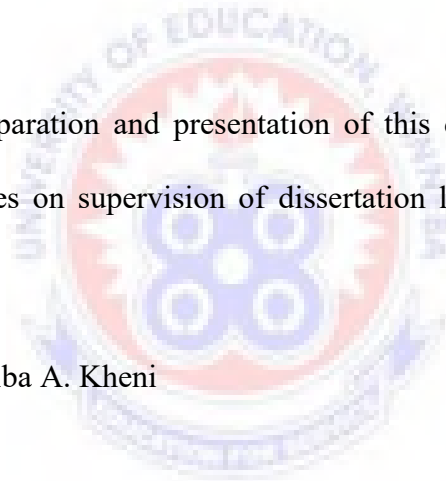
Supervisor's Declaration

I hereby declare that the preparation and presentation of this dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Education, Winneba

Supervisor's Name: Dr. Nongiba A. Kheni

Supervisor's signature.....

Date:



DEDICATION

I dedicate this work to my family for their support



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I would like to acknowledge the people who have been an inspiration and a blessing to me in the preparation of this project work. First, I thank God the Creator of the Universe and our Lord Jesus Christ for giving me life and protection to enable me complete the studies. I am particularly grateful to my Supervisor, Dr. Nongiba Kheni for his guidance and supervision. Also my sincere gratitude goes to all the respondents who availed themselves for questioning during the field survey. It was because of their cooperation that this study was made possible. To them, I say Thank You. I finally thank all my friends and mates who helped me tremendously during the study especially for their ideas and advise.



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ABSTRACT

Top management commitment is an important factor to achieving high health and safety performance of construction. Sadly, literature on health and safety has accorded little attention to top management commitment to health and safety. The aim of this study was to examine the commitment of top management members of construction firms in ensuring workers health and safety. Data for the research were obtained through a questionnaire survey with top management members of twenty randomly selected construction firms in the Ashanti Region. The analysis was done using descriptive statistics and ranking with a relative agreement index. The analysis showed that the respondents had active roles in ensuring the health and safety of workers including guidance, training, education, advice and monitoring worker activities. Empirically, the top rated factors that influence management commitment had RAI values greater than 0.800 and were found include; planned health and safety training, management awareness of health and safety, procedures that meet the requirements of the health, safety and welfare provisions in conditions of the contract and Labour Act, 2003, as well as communication of health and safety performance. In addition, typical top rated challenges in ensuring health and safety were “lack of top management awareness of health and safety”, “inadequate enforcement mechanisms” and “lack of adequate resources to manage health and safety” with respective RAI values of 0.729, 0.714 and 0.700. “High cost of health and safety” was the least ranked challenge with an RAI of 0.598. From the analysis, the study concludes that, with adequate resources, top management members of construction companies would be more committed to the health and safety of their workers given its importance and benefits irrespective of its cost. As the administration of a health and safety program requires funding and resource allocation to thrive, the research recommends among others that management of construction firms should have a definite budget for their safety and health programs.



CHAPTER ONE

GENERAL INTRODUCTION

1.1 Background of the Study

Construction has been considered as one of the most dangerous industries in terms of health and safety criteria. For instance, Davies and Tomasin (1996) indicated that the risk of a fatality in the construction industry is five times more likely than in a manufacturing based industry. As such, issues relating to health and safety have always been of major concern to the construction industry. Construction workers engage in many activities that may expose them to serious hazards, such as falling from high surfaces or being struck by heavy construction equipment. According to Gaertner et al. (1987), top performing companies express high commitment to safety by developing a process in which the workforce can participate, and which can be implemented and monitored so both management and the workforce can receive feedback. According to Hinze and Wilson (2000), health and safety improvements will only be achieved if workers change their behaviours and incentive schemes are implemented to motivate them. Accordingly, preventing occupational injuries and illness should be a primary concern for all employers and employees. In this regard, the identification and utilization of sound safety practices will help reverse the high rates of construction injuries. Such safety practices that are successful in accomplishing low injury rates will lead to improved safety performance in the construction industry.

The role of top management of construction firms in the establishment of a health and safety program at their work sites becomes imperative to the protection of workers and viability of the

firms. According to the Occupational Safety and Health Administration (OSHA, 2016), losing workers to injury or illness, even for a short time, can cause significant disruption and cost to the firm and the workers as well as their families. It can also damage workplace morale, productivity, turnover, and reputation. When contractors' administration and top management increase their efforts in ensuring safety, it goes a long way in creating a safe and sound working environment (Amarh, 2014).

Researchers and practitioners have identified safety culture and safety climate as key to reducing injuries, illnesses and fatalities on construction worksites. In this regard, many construction contractors are trying to improve safety culture and safety climate as a way to move closer to a goal of achieving zero injury worksites. According to Cooper (2005), the commitment of managers to the organization's safety goals and the behavioral safety process is a significant factor. Managers need to provide the necessary resources, give the workforce the authority to run and manage the process alongside the usual safety management systems, and actively support the process. However, in many instances, this does not occur.

In Ghana, the construction industry is one of the fastest growing industries and is among the sectors that generate massive employment within the country. Despite this strategic importance of the Ghanaian construction industry, the industry is fraught with occupational health and safety which are embodied in the high rate of accident cases on Ghanaian construction sites (Danso, 2005). In Ghana, the construction workers are subject to more accident risks than many other industries due to the peculiar characteristics of construction activities. Typically,

construction workers work for long periods and are engaged in complicated construction processes.

With the construction industry considered to be one of the most hazardous industries in which to work, it becomes imperative for the strict adherence of workplace safety in construction. Management commitment to health and safety in construction could engage and maintain behaviours that help reduce accidents and injuries in the construction industry. According to Hinze and Wilson (2000), if safety is emphasized, the occurrence of injuries can be expected to be low and, conversely, if no emphasis is placed on safety, the occurrence of injuries can be expected to be high. In this regard, it becomes imperative that top management of construction firms place an emphasis on health and safety as a principal means of reducing accidents and injuries in the construction industry. During project delivery, it is deemed essential that health and safety management is carried out throughout the various stages, from inception through to completion and operation of the project.

1.2 Problem Statement

In Ghana, the construction industry is among the most exposed sectors when it comes to occupational accidents (Laryea et al., 2010). Although tremendous improvements have been made in health and safety performance in some countries, the construction industry continues to lag behind most other industries. For instance, Amah (2014), explicitly notes that the complex nature of the construction industry in Ghana makes it vulnerable to potentially dangerous conditions that affect the safety of all personnel working on construction projects in the industry.

While the promotion of occupational safety and health has improved over the past decades, the level of workplace fatalities, injuries and illnesses still remains unacceptably high and takes an enormous toll on men, women and their families. The role of top management of construction firms in the establishment of a health and safety program at their work sites becomes imperative to the protection of workers and viability of the firms. There have been many pronounced costs of construction accidents such as reduced productivity, job schedule delays, added administrative time, damage to equipment and facilities, lowered worker morale, and also, less tangible but very real, costs of human suffering (Turkson, 2006). According to Yankah (2012), these costs are prevalent in construction sites with no or little occupational health and safety standards within the Ghanaian construction industry.

According to the Occupational Safety and Health Administration (OSHA, 2016), the commitment of top managers of construction firms to the organization's safety goals and the behavioral safety process is a significant factor in the reduction of accidents and injuries in the construction industry. Thus, management commitment to health and safety in construction could engage and maintain behaviours that help reduce accidents and injuries in the construction industry. However, in many instances, this does not occur. In this regard, this research is conducted to explore top management commitment to managing health and safety of construction workers.

1.3 Aim and Objectives of the Study

The aim of the study is to examine top management commitment to effectively managing health and safety of workers. The specific research objectives are as follows:

- to identify key factors influencing top management commitment to health and safety of workers;
- to assess key challenges top management face in managing health and safety; and,
- to make recommendation for effectively managing health and safety.

1.4 Research Questions

Based on the aim and objectives of the study the following research questions have been formulated to guide the study:

- What are the key factors that influence top management commitment to health and safety of workers?
- What are the constraints to managing health and safety?

1.5 Significance of the Study

As in many other countries, Ghana's construction industry is facing many problems relating to the high incidence of accidents on construction sites. This study is relevant to all the stakeholders in the Ghanaian construction industry including government, consultants and contractors as well as the general public. The nature of construction increases the possibility of accidents making safety a major concern in the construction industry. To reduce the high rate of hazards, proactive construction personnel in the industry may need to take further steps to identify and eliminate the causes of accidents on construction sites. This study attempts to examine the commitment of top officials in effectively managing health and safety of workers. Appropriate safety measures identified can be adopted by management to improve and mitigate the rate of accidents in their projects. Furthermore, this study contributes to knowledge in the field of construction health and safety.

1.6 Limitations of the Study

This research explores the commitment of top management members of construction companies on the health and safety of workers. However, due to budgetary and time constraints, the sample size used for the study was relatively small and selected only from the Ashanti Region. Larger sample sizes could have given a more representative picture. Furthermore, the research was based on only the management members of the construction companies as they were the target population for the study.

1.7 Scope of the Study

The geographic setting for this research is the Ashanti Region. The Ashanti Region is chosen because of the many incidents of construction-related accidents in the recent past. Furthermore, it is home to many of the top management officials of various construction firms in the Ghanaian construction industry from whom data would be sought. The study explores the commitment of top management members of construction firms in effectively managing the health and safety of workers as far as the Ghanaian construction industry is concerned. Therefore, the choice of the Ashanti region is appropriate as it affords the researcher the opportunity to gather the required data needed for the research from the construction officials.

1.8 Organization of the Study

The research report will be organized into five chapters. Chapter one encompasses the introduction to the study. It consists of the research background, problem statement, research purpose and objectives, research questions, research scope and significance of the study.

Chapter two contains the review of related literature on the topic under study. Chapter three will contain details of the methodology for the study. Chapter four will contain the results and discussions of the data obtained. The summary of findings, conclusions and recommendations will be contained in chapter five. Figure 1.1 shows the diagrammatic representation of the structural workflow for this research.

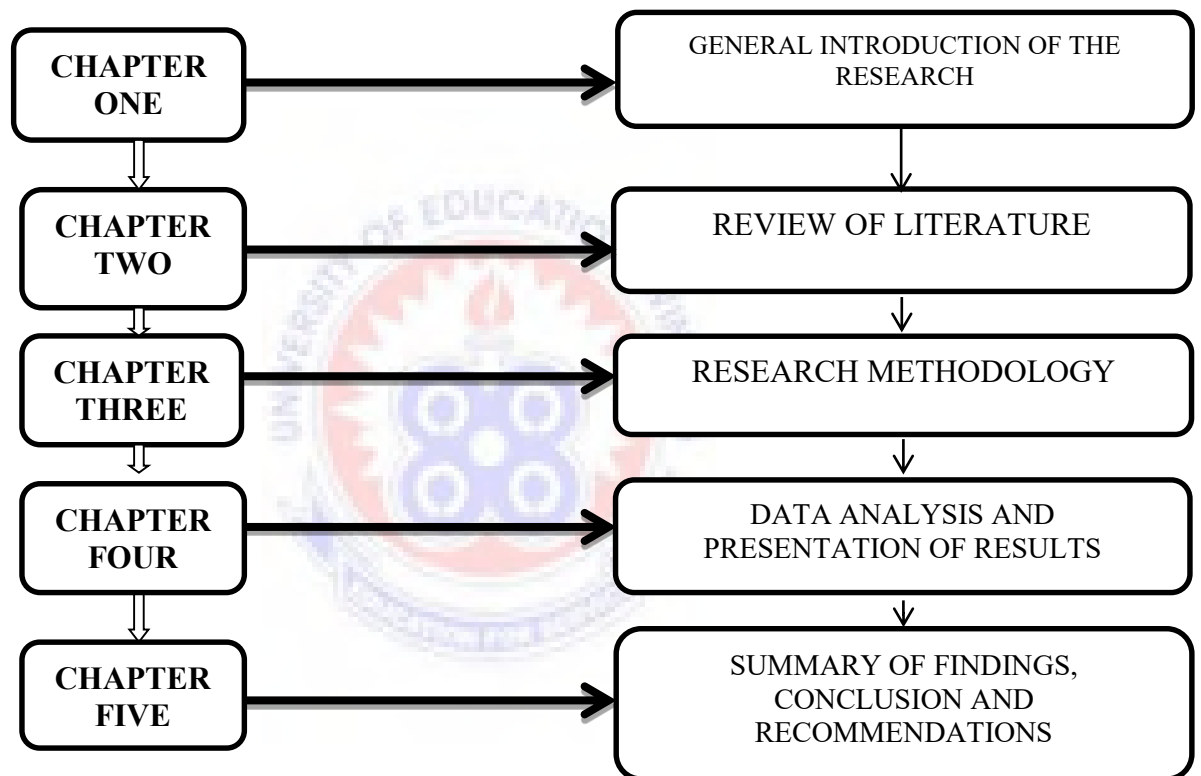


Figure 1.1: Summary of Workflow of the Study

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In chapter one, the general introduction and background to the research were discussed, including the problem statement, research aim and objectives, research methodology, scope and the significance of the research. This chapter reviews pertinent literature on the commitment of top management of construction firms to health and safety of workers. It covers secondary materials from research articles, theses and other relevant publications related to the conceptual issues relevant to this study. This chapter provides the conceptual and theoretical basis for this research. The chapter starts with an overview of health and safety hazards in construction. This is then followed by a discussion of the factors that influence construction accidents; incidence of construction accidents; overview of health and safety standards and performance in construction; and the practices and challenges of implementing health and safety standards in construction.

2.2 Overview of Health and Safety Hazards in Construction

Every year, the construction industry accounts for a high number of occupational injuries and fatalities. This has made the construction industry to be regarded as a very hazardous place to work considering the high level of health and safety risks. In this sense, Hinze and Wilson (2000) note that the construction industry, when compared with other industries, has a disproportionately high rate of disabling injuries and fatalities.

The International Labour Organisation (ILO, 2001) explicitly put forward that occupational health and safety encompasses the prevention and maintenance of the highest degree of physical, mental and social well-being, the prevention of ill-health among workers caused by their working conditions, the protection of workers from factors adverse to their health in their employment, and the placing and maintaining workers in occupational environments adapted to their individual and psychological conditions. However, the global construction industry records a high rate of accidents because of the dangers to health and safety within the industry.

In general, a high level of occupational health and safety contributes to the achievement of material and economic objectives and thus provides high quality and performance in working life. In spite of this, conditions at work and in the work environment for many occupations particularly in construction still involve a distinct and even severe hazard to health that reduces the well-being, working capacity and even the lifespan of working individuals. For instance, according to ILO (2005) estimations, over 60,000 fatal accidents happen yearly on construction sites around the world. Similarly, many researchers have found that the injury and fatality rate in construction projects is very high as compared with other sectors of industry in many countries (Lingard and Rowlison, 2005; Smallwood et al, 2008). By implication, construction health and safety risks are always a critical concern for both construction professionals and governments all over the world.

Construction sites are usually busy places with a large number of ongoing activities. The dangers faced by construction workers are alarming as the death rate of workers is higher in construction than any other industry. Although the construction industry is regarded as dangerous in terms of health and safety of workers, the rate of construction fatalities varies between the developed regions and the developing regions of the world. This could be attributed

to the marked variation in economic and occupational structures, working conditions, work environment, and the health status of workers in different regions of the world, in different countries and in different sectors of the economy. In comparison with developed countries, construction sites in developing countries are about ten times more dangerous (Hämäläinen et al. 2006).

The construction sector everywhere faces problems and challenges. However, in developing countries, these difficulties and challenges are present alongside a general level of socio-economic stress and a lower productivity rate when compared to developed countries (Ofori, 2000). Construction within developing countries often fails to meet the needs of modern competitive businesses in the marketplace and rarely provides the best value for clients and taxpayers (Datta, 2000). Additionally, this sector also demonstrates poor performance in respect to health and safety due to the absence of any stringent safety and construction laws.

In developed countries, many safety acts and legislation exist and are implemented effectively. Nominated safety officers promote hazard awareness with the help of regular safety training sessions. In developing countries, however, safety rules barely exist at all; and when they do, they are inappropriate, ineffective, out-of-date and based on conditions that prevailed while the country was still being colonised. Additionally, the regulatory authority is usually very weak in implementing rules effectively, and work hazards are either not perceived at all, or perceived to be less dangerous than they actually are (Larcher and Sohail, 1999).

Furthermore, the poor health and safety records in construction projects within developing countries can be attributed to the high proportion of small firms and the high number of self-

employed workers; the variety and comparatively short life of construction sites; the high turnover of workers; and the large proportion of seasonal and migrant workers (ILO, 2005).

2.3 Incidence of Construction Accidents

According to the ILO (2005), the construction industry in the European Union (EU) accounts for close to 30% of all fatal industrial accidents, yet it employs only 10% of the working population. Similarly, in the United States of America (USA) construction accounts for 20% of fatal accidents and only 5% of employment, while in Japan, construction fatalities account for 30-40% of industrial fatal accidents.

In the United States according to the Bureau of Labor Statistics, 13,502 construction workers died due to work-related injuries from 1992 through 2003 while the construction industry accounts for 19 percent of all workplace injuries and fatalities. Serious work-related injuries cost employers almost \$1 billion per week in 2002 in payments to injured workers and their medical care providers, growing to \$49.6 billion from \$46.1 billion in 2001 (Blotzer, 2005). The number of fatalities at work in the construction sector remains a matter of serious concern for the Government, employers and employees alike.

Notwithstanding the regulatory activity and social partner initiatives, the number of fatalities related to construction in Ireland has generally increased since the 1990's (HSA, 2000). This increase has taken place against a background of rapid expansion in the construction industry. Since 1992 the numbers involved in the construction industry has more than doubled to 166,300 in 2000 (Construction Industry Review, 2001) cited in (McDonald and Hrymak, 2001). The Health Safety and Environmental Act (2001), reports that the European average fatality rate in construction was 13.3 per 100,000 workers in 1996. In contrast with that figure, the HAS

(1999), has reported a rate of 8 fatalities for 100,000 workers for the Republic of Ireland in 1996.

As regards to construction safety in the Gulf region in general, the record is poor in terms of international standards. In 1999, 923 site accidents of Grade IV 1 and above were recorded at countryside construction, in which 1097 construction workers lost their lives (Qatar Statistical Yearbook of Construction, 2000). In the UAE accidents are often not made public by construction firms. However, some cannot be hidden. The construction companies do not keep an official record of the number of construction-site deaths or injuries. As a result, there is no effective way to study construction-site accidents to develop better health and safety practices.

According to Berg (1999), the leading cause of deaths in construction worldwide can be attributed falls and adds that the percentage of fatalities from falls on German construction sites accounts for 50% of all fatalities in that work sector. Cattledge et al. (1996) analysed construction fatality rates in the United States between 1980 and 1989. They found that 49.6% of all occupational related fatalities due to falls occurred on construction sites. Also in America, McVittie (1995) compared the percentage of fatalities from falls to a different elevation on construction sites in Ontario (Canada) and the United States. In Ontario, between 1988 and 1992, 40% of all fatalities on building sites were due to falls, while that figure was of 30% for the United States for the period between 1985 and 1989. Similarly, Davies and Tomasin (1996) had reported that 70-80% of all fatalities in the UK each year are attributed to falls. Falls from one level to another, falls on the same level and plant machinery and structures falling and striking, crushing or burying people were accounted for that percentage.

In 2000, the labour department reported that the construction industry in Ghana accounted for the highest rate of occupational deaths as compared to other industrial sectors. Following the emergence of Ghana, an oil producing country, the number of accidents is likely to increase because of the number of on-going construction projects. A number of people can be held accountable for a construction accident, from the subcontractor and contractor to the owners, architects, insurance companies and equipment manufacturers. Although contractors are required to inspect construction sites with safety engineers and to enforce employee compliance with safety precautions, construction accidents still occur because of inadequate safety regulations or lack of supervision.

According to the Labour Department (2000) report, 56 out of a total of 902 occupational accidents that occurred in construction were fatal and 846 were non-fatal (Laryea et al., 2010). According to Danso (2010), Kumasi (The regional capital of the Ashanti region, Ghana) alone recorded 160 construction fatalities from 1998 to 2008. In 1998, the number of construction reported accidents was 16. In 2000, it had picked up from 23 and peaked at 32 in 2003. This industry experienced a constant increase of 42 from 2004 to 2005. This remarkable consistency increased to 50 in 2006. In 2007, it had picked up again from 46 to 64 in 2008.

2.4 Factors Influencing Accidents in Construction

Some peculiar characteristics of the construction industry that pose danger to health and safety include its fragmented nature, the uncertain and technically complex nature of construction work, the uncontrollable environment in which production takes place, and the financial and time pressures imposed upon project participants (Halender and Holborn, 1991).

Accidents are viewed as originating from a technical or human error (Murie 2007). According to Ridley (1986), about 99 percent of construction accidents is caused by either unsafe acts or unsafe conditions or both. The unsafe act is a violation of an accepted safe procedure which could permit the occurrence of an accident. The unsafe condition is a hazardous physical condition or circumstances which could directly permit the occurrence of an accident. It can be noted, however, that many accidents result from a combination of contributing causes and one or more unsafe acts and unsafe condition. The multiple accidents causation theory postulates that there are many contributory causes leading to an accident. The causes are categorized into behavioural and environmental factors. Behavioural factors include attitudes, skills and knowledge. Environmental factors include worksite hazards and procedures that contribute to injuries (Taylor et al., 2004).

Even if a person or a machine has characteristics that make them more vulnerable to accidents, a variety of factors determine the probability of an accident. Accidents do not necessarily happen where expected. The human element is important since people cannot cope with some conditions, especially the unexpected. Accidents by definition are unexpected and most people find it hard to manage unexpected situations. The dynamic nature of construction is one of the major causes for various types of incidents resulting in injuries and fatalities in the construction industry (HSE, 2003).

It is notable that construction sites are constantly changing and temporary. Each construction site involves many processes and activities performed by sub-contractors in close proximity to each other. Further, several trades and concurrent tasks are present on a construction site at the same time, which can bring them the specific hazards of their trade. The frequently changing construction site and work modifications cause new hazards to constantly emerge.

The significant factors causing construction accidents are related to the unique nature of the construction industry, human behaviour, difficult work-site conditions, and poor safety management, which result in unsafe work methods, equipment, and procedures. For instance, Davies and Tomasin (1996), observed a number of reasons why accident records within the construction industry compare poorly with those of the manufacturing industry. According to them, there is normally a controlled working environment in factories with little change in the working procedures and equipment over long periods. In addition, the labour force usually remains fairly constant. In this regard, identified hazards can be remedied with relative ease, and the danger mitigated. However, the case is quite different in the construction industry as the working environment is constantly changing.

Abdelhamid and Everett (2000) conducted a comprehensive study on construction accidents in the USA and classified the causes into human and physical factors. Human factors included failure to wear personal protective equipment; horseplay; operating equipment without authority; operating at an unsafe speed; personal factor; remove safety device; serviced moving and energized equipment; took unsafe position or posture; used defective tool or equipment; and other unsafe action. While, physical factors were due to; unsafe act of another person(s); disregard known prescribed procedures; defects of accident source; dress or apparel hazard; environmental hazard; fire hazard; hazardous arrangement; hazardous method; housekeeping hazard; improper assignment of personnel; inadequately guarded; public hazard; and other unsafe conditions. Similarly, the findings by Toole (2002) in the USA and suggested that the causes of accidents were due to lack of proper training; deficient enforcement of safety; safety equipment not provided; unsafe methods or sequencing; unsafe site conditions; not using

provided safety equipment; poor attitude toward safety; and isolated and sudden deviation from prescribed behavior.

Furthermore, Dejus (2007) conducted a study in the Lithuanian Republic and identified that the major reasons for serious and mortal accidents are inexperienced employees, lack of qualifications and understanding risk on a construction site. Rahim et al. (2008) carried out a survey in Malaysia to identify the causes of accidents on construction sites; they found that unsafe methods, including incorrect procedures, knowledge level, and disobeying procedures are the most frequent reasons for accidents on construction sites.

Tam et al (2004) did a study in China and noticed that the causes of accidents were due poor safety awareness from top leaders; lack of training; poor safety awareness of project managers; reluctance to input resources for safety; reckless operation; lack of certified skill labor; poor equipment; lack of first aid measures; lack of rigorous enforcement of safety regulation; lack of organizational commitment; low education level of workers; poor safety conscientiousness of workers; lack of personal protective equipment; ineffective operation of safety regulation; lack of technical guidance; lack of strict operational procedures; lack of experienced project managers; shortfall of safety regulations; lack of protection in material transportation; lack of protection in material storage; lack of teamwork spirits; excessive overtime work for labor; shortage of safety management manual; lack of innovative technology; and poor information flow.

Kartam and Bouz (1998) did a study in Kuwaiti construction and noted that the causes of accidents were due to worker turnover and false acts; inadequate safety performance; improper cleaning and unusable materials; destiny; low tool maintenance; supervisory fault; and

misplacing objects. Likewise, Pipitsupaphol and Watanabe (2000) classified the causes of accidents in Thailand construction sites into management factors and influential factors which were: unique nature of the industry; job site conditions; unsafe equipment; unsafe methods; and human elements. They further concluded that major immediate causes were due to failure to use personal protective equipment; improper loading or placement of equipment or supplies; failure to warn co-workers or to secure equipment; and improper use of equipment. A similar view is held by Lubega et al. (2001), who found that the causes of construction accidents in Uganda include a lack of knowledge about safety rules, engaging an inexperienced workforce, and lack of respect for safety.

To summarize the literature on factors of accidents and ill-health problems on construction sites, it is observed that the causes of construction accidents can generally be classified into the five most influential factors. These are:

- Site conditions such as the nature and physical layout of the work, location and weather.
- Equipment and materials specification such as paint and asbestos that have the potential to cause ill-health problems.
- The human factor including human behaviour, competence, and attitude.
- Management such as leadership and safety culture of the organization.
- The job factors include the nature of the task, design, detail, duration and the size of the structure itself.

2.5 Overview of Health and Safety Standards and Performance in Construction

According to Kheni (2008), construction health and safety should thus be of primary concern to employers, employees, governments and project participants. Put more explicitly, the main

parties responsible for construction health and safety are the client, main contractor, regulatory agencies and employees. This is because the activities of the construction industry have raised serious health and safety concerns amongst governments, health and safety stakeholders, health and safety professionals as well as researchers over the past few decades (Enshassi and Mayer 2002; Gibb 2005).

Health and safety duties of state and regulatory agencies: Government regulatory agencies often enact regulations to help ensure that a construction project is safe to build, safe to use, and safe to maintain and delivers you good value. Good health and safety planning also helps to ensure that a project is well managed and that unexpected costs and problems are minimized. Health and safety duties of employer: Clients have a big influence over how work is done. Where potential health and safety risks are low, clients are required to do little. Where they are higher, clients need to do more. Employers must assess the work being undertaken and the environment his employees will operate in when determining the appropriate PPE to be worn.

In response, health and safety legislation has been developed to ensure management of construction businesses, and recently many other participants in a project, assume responsibility for managing the risks associated with construction projects. Health and safety management in the construction industry has evolved from measures adopted in accident prevention to more systematic and proactive approaches to minimising the risk of hazards in the industry. Some health and safety practices are required by health and safety legislation to be implemented on construction sites in some countries. For instance worker involvement in health and safety, training in health and safety, and health and safety committees, are covered by health and safety regulations in the UK.

In the UK construction, is a large industry which accounts for 8% of the gross domestic product of the United Kingdom. It employs one and a half million people and produces activity worth £65 billion each year. The construction industry has a world reputation for the quality of its work but it remains one of the most dangerous in Britain. The health and safety problem in the construction industry is its poor record when compared to the other parts of British industry.

In many developing countries, health and safety regulations are incomprehensive and limited in coverage (Suazo and Jaselskis 1993). LaDou (2003) reports that occupational health and safety laws cover 10% of the working population in developing countries, omitting many high-risk sectors such as agriculture, fishing, forestry and construction. The Ghanaian construction Industry, according to Anaman et al (2007) was the third largest growing economic sector outstripping the manufacturing industry in 2004 with a constant GDP growth of about 5.8 % from 2004 to 2005. However, Ghanaian policymakers have not promoted the industry in the context of policies and legislation. For instance, the Ghanaian construction industry has not developed well enough to have a separate legislation like other developing countries specifically for construction. Ghana depends only on the:

- National labour Act 651 of 2003;
- Factories, Offices and shop Act of 1970;
- Building Regulation; and
- Workmen compensation Act 1987

2.6 Challenges of Implementing Health and Safety Standards in Construction

According to Kheni (2008), construction health and safety should be of primary concern to employers, employees, governments and project participants. A number of construction

businesses manage the health and safety function in their businesses by carrying out health and safety activities aimed at minimizing or eliminating the risk of hazards on their sites. A growing number of construction businesses, particularly larger ones, have tended to adopt health and safety management systems which have their origin in Deming's Plan-Do-Check-Act model of continuous quality improvement (Hamid et al. 2004). Essentially, a health and safety management system has four primary elements:

- a. planning;
- b. implementing the plan;
- c. reviewing the plan; and,
- d. evaluating and taking measures to improve strategy.

Helledi (1999) reported on the adoption of a simple, non-bureaucratic health and safety management system by SMEs in the Finnish construction industry which proved effective in bringing down the numbers of site accidents experienced by contractors. The elements of the health and safety management system consisted of:

- Planning phase involving the assessment of risk;
- Implementation phase involving communication of critical tasks to be carried out on site;
- Control phase involving monitoring the activities; and, a follow up phase which provides feedback and enables corrective measures to be taken.

Approaches to health and safety management reported in construction hardly qualify as health and safety management systems because they lack one or more of the elements of Deming's Plan-Do-Check-Act (PDCA) cycle. For instance, Agrilla's (1999) 3Es suggested for achieving

high safety performance comprises; safety engineering, safety education and safety rule enforcement. This health and safety management system involves planning as part of the safety engineering process but lacks clear elements or procedures on how to continuously improve health and safety performance.

The adoption of comprehensive health and safety management systems has been shown to be a difficult task for construction SMEs (Eakin et al. 2000, Mayhew 2000). Some reasons as to why SMEs might find it difficult adopting such systems include lack of adequate resources, the fact that they operate in a competitive environment and operate under relatively informal management procedures (Vassie et al. 2000).

Another important factor is that people behave differently in different settings. One of the contributing factors is an organisation's culture, more specifically its safety culture. The members of an organisation are governed by a relatively similar set of values. This may be because organisations tend to recruit people who think in a similar way. It may also be a relatively conscious development. A good safety culture is a work environment where all members of the organisation share a high safety ethic.

There are health and safety problems on almost all construction sites which relate to reporting accidents, employing and subcontracting. In developed countries, there is ample evidence that health and safety performance of SMEs is poorer than larger businesses (Cully et al. 1999; Walters, 2001). In the face of scarce resources, SMEs are unlikely to commit sufficient amounts and the right type of resources in the management of health and safety. This is more true of SMEs in developing countries where access to finance is a major problem.

The study by Kheni (2008) on health and safety practices among construction SMEs in Ghana revealed serious problems. The main problems identified by Kheni included lack of skilled human resources, inadequate government support for regulatory institutions and inefficiency in institutional frameworks responsible for health and safety standards. Kheni (2008) provides a broad understanding of health and safety in the construction sector in Ghana.

The main health and safety site requirements in construction relate to tidy sites and decent welfare, falls from height, manual handling, and transport on site. Site operatives are normally required to plan and organise their operations, ensure that they are trained and competent and know the special risks of their trade and raise problems with their site supervisor or safety representative (HSE, 2009). The main personal protective equipment (PPE) in construction (including clothing affording protection against the weather) which is intended to be worn or held by a person at work and which protects him against one or more risks to his health or safety. PPE should be regarded as a 'last resort' when considering control measures. Other methods should be considered and used that will reduce or eliminate risk to injury. However, where PPE is the only effective means of controlling the risks of injury or ill health, then employers must ensure that PPE is available. PPE should be worn at all construction sites.

According to Peyton (1991), safety training and orientation are necessary elements of an effective safety program. Supervisors and workers must understand the company's safety policy and procedures and the hazards associated with the work. When employees first arrive on site, a safety orientation training program should be provided. This training session can cover the company and project safety policies, safety regulations, site orientation, personal protective equipment and OSHA required training.

A typical construction site may require workers to wear a hard hat, coveralls, safety footwear, gloves, eye protection and high visibility vest. These must be provided to all employees. Government regulatory agencies often enact regulations to help ensure that a construction project is safe to build, safe to use, and safe to maintain and delivers you good value. Good health and safety planning also helps to ensure that a project is well managed and that unexpected costs and problems are minimised. Also, clients have a big influence over how work is done. Where potential health and safety risks are low, clients are required to do little. Where they are higher, clients need to do more. Employers must assess the work being undertaken and the environment his employees will operate in when determining the appropriate PPE to be worn.

2.7 Commitment of Managers to Health and Safety

Huang et al. (2012) examined, employees perceptions of safety training versus management commitment to safety and the association with future injuries and whether or not these concepts would be better treated as two elements of a singular factor (safety perception) or as two separate factors.

The study concluded that employee's perceptions of management commitment to safety and safety training were both significant predictors of future injury outcomes at times and not at all during other times. The variation resides with the employees understanding of training and their perception of management's commitment to safety. For example, while many employees viewed new-hire orientation as a part of their safety training, other employees did not. Consequently, the study also revealed that many employees performing the exact same duties, in identical environments, and who received like training perceived their training differently. These variances confirmed, when compared to observational data, that when employees

perceive the management as having a high level of commitment to safety, then their perception of safety training is equally high; and vice versa. Finally, the researchers also concluded that the concepts are better off being treated as two separate factors.

Adequate funding is a key factor influencing management commitment to health and safety. According to Crumley (2014), administration of an occupational safety and health program requires funding and resource allocation to exist or thrive. A typical occupational safety and health program will require funds and resources for hazard abatement, special assessments, equipment maintenance, facility upkeep, program promotion, awards and recognition, multi-media, etc. When leadership considers what the annual budget for the organization should be, occupational safety and health must be considered. In this regard, failure to budget for occupational safety and health is detrimental to a thriving program and stifling to the onset of a one. Management's willingness to budget appropriately for the administration of their OSH program is indicative of their commitment.

Fernandez-Muniz et al. (2009) assessed the relationship between occupational safety management and organizational performance. Through an extensive literature review, they found that other researchers before them had studied various aspects of management commitment and safety, but none had focused on the holistic effect safety management has on an organization. Recognizing that Spanish organizations severely lacked safety culture, the researchers focused their study accordingly. They hypothesized the following:

- the safety management system has a positive influence on safety,
 - the safety management system has a positive influence on competitive performance,
- and

- the safety management system has a positive influence on economic-financial performance.

Bhattacharya & Tang (2013) researched the effectiveness of the manager's role as it relates to occupational health and safety (OSH) in the British shipping industry. It was identified that a causal factor was poor regulatory standards and the fact that senior leadership was typically on-shore while the bulk of the workforce was off-shore.

To foster a Culture of Safety and demonstrate commitment, management should participate in occupational health and safety meetings. This will allow them to respond to safety issues and concerns and develop solutions to aid in the implementation of their OSH program. Similarly, employees should work closely with and under the direction of management in support of the OSH program and suggest initiatives to promote general safety awareness in the workplace. In this forum, employees are afforded the opportunity to voice their concerns and obtain immediate and direct feedback from the individuals charged with ensuring their workplace is safe and healthful. Collaboration to this extent bolsters a trusting work relationship between management and the workforce and establishes a layer of accountability for both sides.

Bragg (2002) explored the four core tenets of employee and management commitment and the synergy that must be present to yield OSH program success. Commitment tenets for employees and management respectively include 1) want to, 2) have to, 3) ought to, and 4) uncommitted.

Bragg suggests that the best employees are those who "want to" work for their employer, while those employees who fall into categories 2-4 are less desirable. Category 2-4 employees are said to be problematic, not focused, and less productive. Similarly, management who "want to" be committed to their employees and organization do what is necessary to create and sustain

attractive work environments. Committed employers desire to be known as the “best place to work.” Category 2-4 managers are committed to their employees only because they have to show some signs of commitment to attracting a workforce. These employers merely satisfy the legal requirements of occupational safety and health and do what is necessary to stay competitive.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research methodology adopted for this study to achieve the research objectives as well as the profile of the study area. The chapter discusses the research design, types and sources of data, sampling methods, techniques of data collection and data management and analysis. It provides detailed explanations of the methods used and how they were suitable in addressing the objectives of this research.

3.2 Research Design

According to Ghauri and Grønhaug (2010), a research design is the overall plan for relating a conceptual research problem to relevant and practicable empirical research. This research is a descriptive study designed to assess issues relating to management commitment to health and safety in the Ghanaian construction industry. Descriptive survey design is used in preliminary and exploratory studies to allow a researcher to gather, summarize, present and interpret information for the purpose of clarification. The research also relied on a cross-sectional approach in data collection in the sense that data collection occurred at a single point in time for each primary respondent. The research design was appropriate for this study because it allowed for generalization of findings to reflect the views of the population especially with the usage of a representative sample.

3.3 Study Population

In research, a population refers to the universe of units from which a sample is selected (Kothari, 2004). The population for this study was top management members of construction firms within the Ashanti Region. The top management comprises managing directors, deputy managing directors and contracts managers of construction firms in the Ashanti Region. The construction firms considered were those registered with the Association of Building and Civil Engineering Contractors of Ghana (ABCEG).

3.4 Sampling Procedure and Sample Size

Sampling is that part of statistical practice concerned with the selection of a subset of individual elements within a population and intended to yield some knowledge about the population of

concern, especially for the purpose of making predictions based on statistical inference. Kumar (1999) explains that a sample is a sub-group of the population which is an ideal representative of the entire population.

In order to take care of all the issues under consideration in the research objectives, this study employed varied sampling methods. In the first place, the researcher identified construction companies in the Ashanti Region that had active construction sites within the region. From this, simple random sampling was used to select twenty (20) random construction sites due to time and financial constraints.

Within each randomly selected site, five (5) top management members were selected as respondents in order to check the consistency of their responses in consideration of their different experience and functions in ensuring safety. These top management members consisted of construction company managers, contracts managers, project engineers, safety officers as well as site managers/supervisors. The construction management members were selected because they have over-site responsibilities for construction projects and are therefore expected to contribute to safety efforts. The respondents were selected based on their availability and willingness to participate in the study. This gave a total sample size of 100 respondents. The choice of the varied respondents was to enable the researcher to identify the varying responses and dimensions to the issue of construction health and safety. The breakdown of the respondents is shown in Table 3.1.

Table 3.1: Breakdown of Sample Size

Sample basis	Number of people sampled	Total

Management members	5 from each of the 20 firms	100
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Source: Author's Construct, 2018

3.5 Data Collection Procedure

The researcher employed the use of data obtained from primary sources and information from secondary sources to meet the research objectives.

3.5.1 Primary Data

Primary data was sourced from management members of selected construction companies. The data included background information, factors influencing health and safety of workers, commitment of management to the safety of workers, as well as constraints to managing health and safety. The primary data assisted the researcher to get original information from the respondents on key issues pertaining to this research.

3.5.2 Secondary Information

Secondary information was used to supplement the primary data. Secondary information was obtained through a review of existing literature from published books and journals as well as policy documents and existing reports about the topic under study. The secondary information thus provided an insight into the study and enabled the thorough examinations of the various views and works of other people that are related to this research.

3.5.3 Research Instrument

This research used a semi-structured questionnaire as the instrument for data collection. Kothari (2004) defines a questionnaire as a formal set of questions or statements designed to gather information from respondents that accomplish research objectives. For this research, a

questionnaire was used because it enhances the reliability of observations and improves replications because of the inherent standardized measurement and sampling procedures. A questionnaire was designed for the top management members of the construction firms to solicit the needed information for the study. The researcher personally administered the questionnaire to the respondents in order to ensure a high return rate and to ensure that the questionnaire got to the right people.

The questionnaire was developed with brevity as an intended goal. The questionnaire consisted of open-ended, closed-ended and a five-point Likert-type questions. The use of the open-ended questions gave respondents the opportunity to freely express themselves on the issues of the study. The closed-ended and five-point Likert-type questions were used for their advantages of being quick to answer and requiring no writing by the respondents. The various questions were obtained with the help of a detailed literature review and were simple, easy, unambiguous and void of technical terms to minimize potential errors from respondents.

3.7 Data Analysis

The data collected was checked and edited to eliminate potential errors that would limit the reliability of the research results. This involved checking the completeness and accuracy as well as the consistency of the answers provided in the questionnaire. Afterwards, the questions were coded and then entered into the Statistical Package for Social Science (SPSS) software version 20 for data analysis. The data were analyzed with descriptive statistics using frequencies and percentages. Also, the quantitative analyses involved the use of a relative importance agreement model to rank the responses on the Likert-type questions provided by the respondents. The respondents were asked to rate the extent to which they agreed or disagreed on some statements

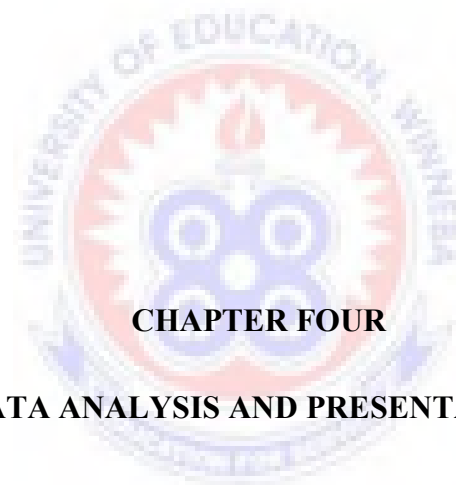
using a five-point Likert scale with 1 representing strongly disagree, 2 representing disagree, 3 representing neutral, 4 representing agree and 5 representing strongly agree. The Relative Agreement Index (RAI) was calculated by multiplying the individual frequencies by their corresponding values of responses under each rating of 1-5 and dividing the sum by the product of total number of respondents and 5 which is the highest figure on the five-point Likert scale.

$$RAI = \frac{1y_1 + 2y_2 + 3y_3 + 4y_4 + 5y_5}{5n}$$

Where y_1 , y_2 , y_3 , y_4 and y_5 are the corresponding number of respondents who choose factors under each rating of 1-5

n = the total number of respondents

Microsoft Excel 2010 was used to create charts and tables to visually present and describe the results of the analysis. The results of the data analysis were interpreted and discussed to arrive at the findings. Furthermore, the discussion of the findings was in the form of comprehensive statements and analytical descriptions based on the primary data as well as secondary information from the review of related literature.



DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents the results of the analysis of the survey data collected. The results of this study have been discussed under thematic sub-sections in line with research objectives. The themes include; background information of respondents; factors influencing top management commitment to health and safety of workers; importance of ensuring health and safety of workers; and challenges top management face in managing health and safety.

4.2 Questionnaire Response Rate

For the purpose of this research, a total of 100 questionnaires were administered to top management of construction companies who had active construction sites in the Ashanti Region. This was done to solicit their views on management commitment to health and safety of their workers. However, out of the 100 questionnaires, 84 questionnaires were found to be completely filled by the respondents and were suitable for the research. As such, 84 questionnaires were used for the analysis accordingly. This gave a questionnaire response rate of 84% and according to Peil (1995), a questionnaire return rate of above 50% is acceptable for a study.

4.3 General Information of Respondents

This section of the analysis provides a description of the respondents that were involved in the questionnaire survey. The respondents' profile covered the respondents' role in their companies, educational qualification, number of years they have been in professional practice, sector type they work for, and the type of construction undertaken.

With regard to their roles, although the respondents comprised of management members, they belonged to specific professions within the construction industry. Table 4.1 illustrates a summary of the professions of the various respondents.

Table 4.1: Professions of Respondents

Profession	Frequency	Percentage
Construction Manager	16	19.0
Project Engineer	14	16.7

Site Engineer	28	33.3
Project Manager	10	11.9
Safety Officer	9	10.7
Quantity Surveyor	7	8.3
Total	84	100.0

Source: Field survey, 2018

It is noticeable from Table 4.1 that majority of the respondents (33.3%) were site engineers. Also, 19% of them were construction managers with another 16.7% of them being project engineers. Project managers comprised 11.9% of the respondents. Safety officers and quantity surveyors comprised 10.7% and 8.3% of the respondents respectively. Evidently, the respondents, despite being top management members of their respective companies belonged to professions that make them responsible for daily task execution and supervision on project sites. In this regard, they are expected to contribute to health and safety management efforts of workers on project sites.

The educational levels of the respondents show that the respondents have obtained different educational qualifications. The educational level of the respondents is shown in Figure 4.1.

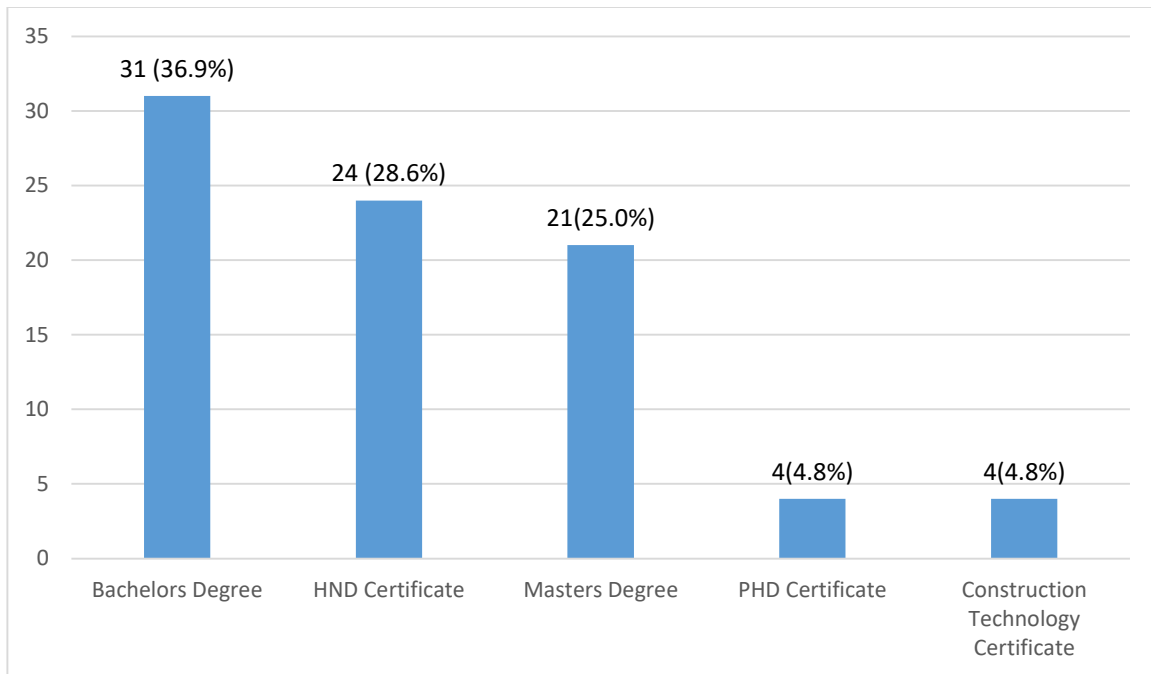


Figure 4.1: Highest Educational Level of Respondents

Source: Field survey, 2018

The majority of the respondents (36.9%) have obtained a Bachelor's degree with another 28.6% of the respondents having obtained a Higher National Diploma (HND). Also, 25.0% have obtained a Master's degree. The respondents who had obtained Construction Technology Certificate comprised 4.8% of the respondents. Impressively, 4.8% of the respondents had Ph.D certificates. This finding signifies that the construction industry in Ghana is open to people with different educational backgrounds. However, there is also a gradual shift from certificate holders who once dominated the management of construction companies as most people in the industry now have higher academic qualifications.

The results of the analysis further showed that the respondents' period of being in professional practice ranged from less than 5 years to more than 15 years. This is illustrated in Figure 4.2.

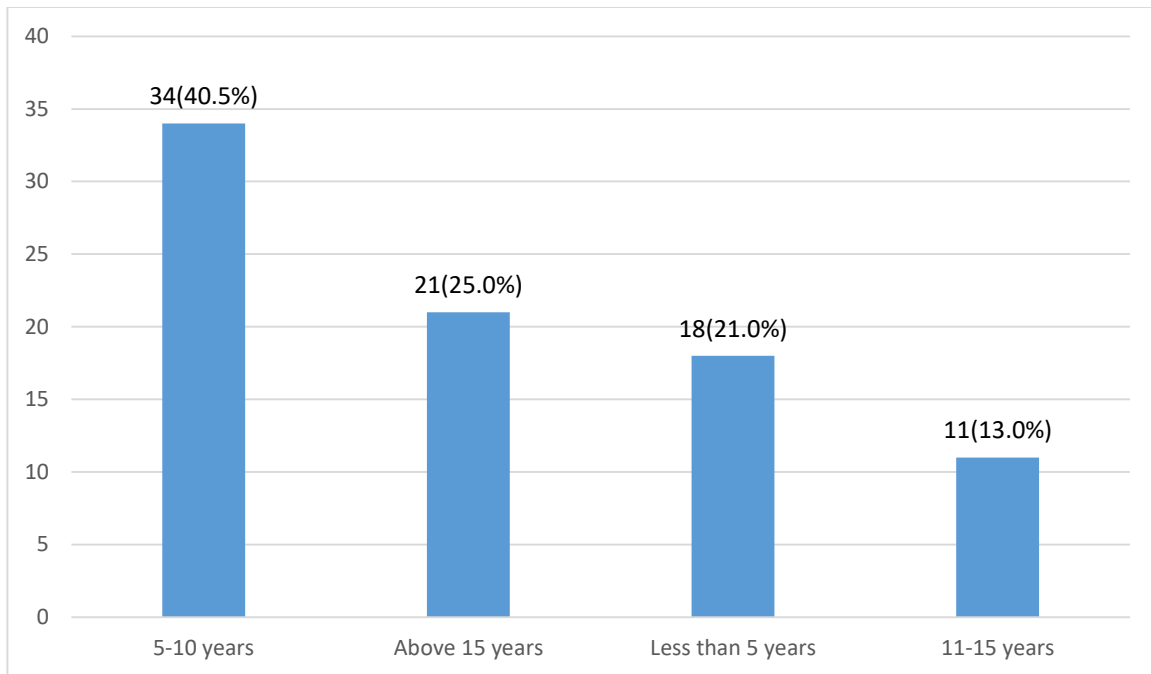


Figure 4.2: Respondents Period of Practicing

Source: Field survey, 2018

From Figure 4.2, it is noticeable that the majority of the respondents (40.5%) have been in professional practice for a period of 5 to 10 years. Also, 25.0% of the respondents have been in professional practice for more than 15 years. About 21% of the respondents have practiced for less than 5 years with another 13% practicing for between 11 and 15 years. This helped in analysing information from respondents with varying work experiences solicit their views on health and safety of workers.

With regard to the sector type the respondents worked for, most of them (42.9%) worked for both the public and private sectors of the country. Another 41.7% worked solely for the public sector with only 15.5% indicating that they work solely for the private sector. This is illustrated in Figure 4.3.

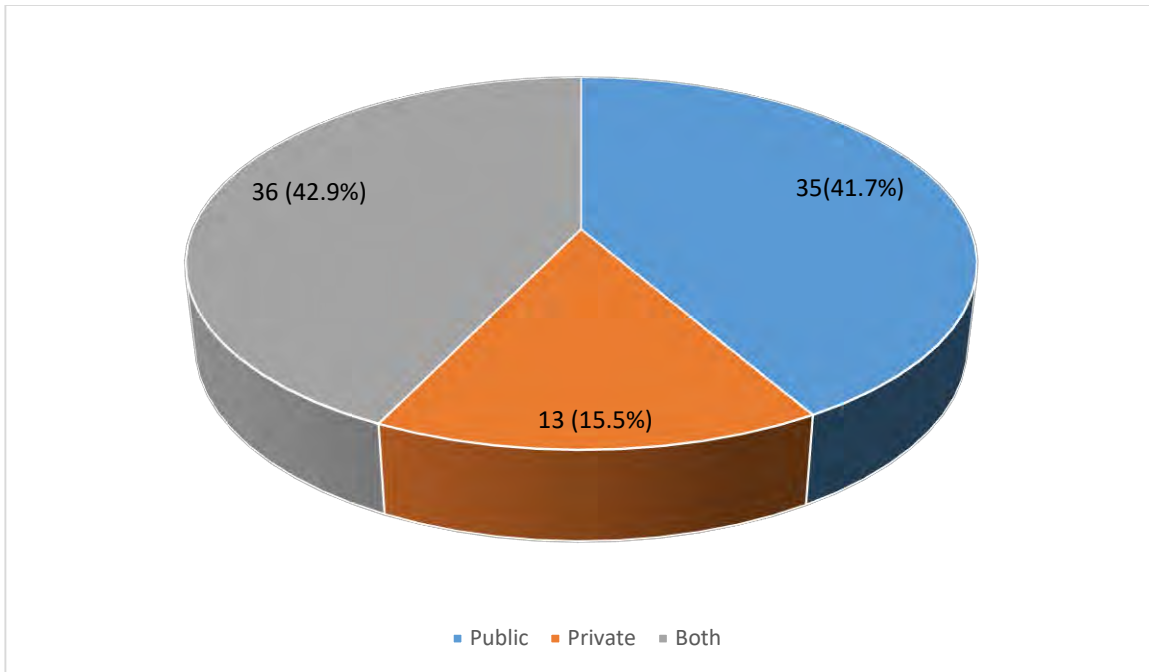


Figure 4.3: Sector Respondents Work For

Source: Field Survey, 2018

Further analysis of the data revealed that the respondents undertook varying construction activities as indicated in Table 4.2.

Table 4.2: Construction Type Undertaken by Respondents

Construction Type	Frequency	Percentage
Building Construction	40	47.6
Road Construction	27	32.1
General Construction	11	13.1
Civil Works	6	7.1
Total	84	100.0

Source: Field survey, 2018

From Table 4.2, it is noticeable that the majority of the respondents (47.6%) undertake building construction activities. This was followed by 32.1% of the respondents who undertake road

construction activities. In addition, 13.1% and 7.1% of the respondents respectively undertake general construction activities and civil works.

The results of the analysis on the general profile of the respondents indicate the diversity of respondents from whom data were obtained. The information contained in the respondents' profile indicates that the sample provides a realistic profile for which a reasonable level of credence can be given to their responses.

4.4 Factors Influencing Top Management Commitment to Health and Safety of Workers

In general, it has been established that construction health and safety should be of primary concern to all parties in the construction industry including employers, employees, governments and project participants. A number of construction businesses manage the health and safety function in their businesses by carrying out health and safety activities aimed at minimizing or eliminating the risk of hazards on their sites. A growing number of construction company top managers have tended to be committed to the health and safety of their workers. As a key objective of this study to identify key factors influencing top management commitment to health and safety of workers, the respondents were first asked to indicate their role in ensuring health and safety of their workers on site. Although the respondents had different professions, they belonged to the top management members of their respective companies. Varying responses were provided by the respondents and were related to providing guidance, training, education, advice and monitoring worker activities. Some typical comments by the respondents on their role of ensuring health and safety are as follows:

“Helping the workers to abide by health and safety rules every working day”

Construction manager

“To make sure that workers are in their safety shoe to give the necessary advice to the worker while construction is in going on”

Site engineer

“The major role I play in ensuring health and safety on site include the provision of personal protective equipment for works force and organising induction training on health and safety among others”

Project engineer

“I am charged to remind all workers of their safety precautions, daily. as part of their safety plans, tools/equipment are checked daily after work for faultiness”

Quantity surveyor

“Creating awareness and sounding warnings providing safety signs at vantage spots”

Site engineer

“Adhere to safety precautions is my core objective and ensuring workers are in their better states if not best before and during site works”

Site engineer

From the various responses, it becomes apparent that the respondents had various active roles relating to ensuring the health and safety of their workers on site. As a follow-up, the respondents were asked to rate the overall commitment of management members to ensuring the health and safety of their workers. Their response is presented in Figure 4.4

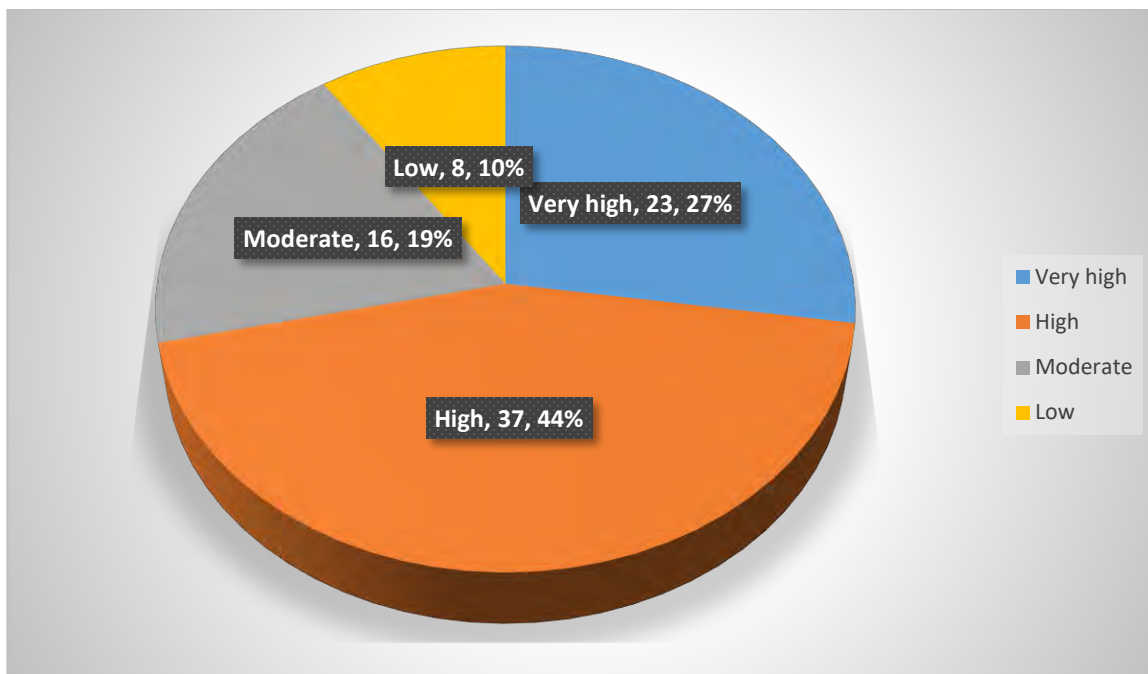


Figure 4.4: Overall Commitment of Management to Health and Safety

Source: Field survey, 2018

Majority of the respondents expressed that their management members were very committed to workers health and safety. For instance, 44% and 27% of the respondents indicated that the overall commitment of their management members to health and safety was high and very high respectively. Only 10% of the respondents indicated that the overall commitment of their management members to health and safety was low.

Empirically, the respondents were asked to rate some factors influencing top management commitment to health and safety management of their workers in their respective companies. A five-point Likert scale with 1 representing not often, 2 representing less often, 3 representing moderately often, 4 representing often and 5 representing very often was used. The data was analyzed using a Relative Agreement Index (RAI) developed for each measure by multiplying individual frequencies by their corresponding values of factors under each rank of 1-5 and

dividing the sum by the product of total number of respondents and 5 (highest figure on the five-point Likert scale). The result of the analysis is presented in Table 4.3.

Table 4.3: Respondents' Rating of Factors Influencing Commitment to Health and Safety

Factors	1	2	3	4	5	Total	Weighting	RAI	Rank
Planned health and safety training for workers	0	4	9	27	44	84	363	0.864	1 st
Top management awareness of Health and safety in construction	0	2	14	33	35	84	353	0.840	2 nd
Our procedures meet the requirements of the health, safety and welfare provisions in conditions of the contract	2	4	16	25	37	84	343	0.817	3 rd
Our procedures meet the requirements of the health, safety and welfare provisions in Labour Act, 2003	0	4	21	25	34	84	341	0.812	4 th
Communicating health and safety performance to employees	4	4	9	33	34	84	341	0.812	4 th
We undertake formal site health and safety inspections	4	3	17	24	36	84	337	0.802	6 th
We have a well laid out health and safety policy	2	4	21	22	35	84	336	0.800	7 th
We have a well laid out health and safety budget	4	5	10	37	28	84	332	0.790	8 th
We have an effective internal health and safety department	4	10	11	23	36	84	329	0.783	9 th

Our procedures meet the requirements of the Health, safety and welfare provisions in Workmen’s Compensation Law, 1987	0	7	22	26	29	84	329	0.783	9 th
Our procedures meet the requirements of the Health, safety and welfare	2	6	22	27	27	84	323	0.769	11 th
We have a health and safety committee	6	9	24	32	13	84	289	0.688	12 th

1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

RAI=Relative Agreement Index

From Table 4.3, “planned health and safety training for workers” had the highest RAI value of 0.864 as the highly rated factor of top management commitment to health and safety of workers. The next ranked factor in the second position was “top management awareness of health and safety in construction” with an RAI of 0.840. This implies that the commitment of top management members in ensuring health and safety stems from their support of health and safety arrangements. This was followed by the statement that “our procedures meet the requirements of the health, safety and welfare provisions in conditions of contract” ranking third with an RAI of 0.817. The related statements on factors affecting management commitment to ensuring health and safety of workers that “our procedures meet the requirements of the health, safety and welfare provisions in Labour Act, 2003” and “communicating health and safety performance to employees” were both ranked fourth with an RAI value of 0.812.

The sixth, seventh and eighth ranked statements on factors affecting management commitment to ensuring health and safety of workers were “we undertake formal site health and safety inspections”, “we have a well laid out health and safety policy” and “we have a well laid out health and safety budget” respectively with RAI values of 0.802, 0.800 and 0.790. It is noticeable that management’s willingness to budget appropriately for the administration of their occupational safety and health program is indicative of their commitment.

“We have an effective internal health and safety department” and “our procedures meet the requirements of the Health, safety and welfare provisions in Workmen’s Compensation Law, 1987” were both ranked ninth with an RAI value of 0.783.

However, the least rated statements on the factors that influence top management commitment to ensuring health and safety of workers were “our procedures meet the requirements of the Health, safety and welfare provisions in Factories, Offices and Shops Act, 1970” and “We have a health and safety committee” with RAI values of 0.769 and 0.688 respectively.

4.5 Importance of Ensuring Health and Safety of Workers

The respondents were further asked to rate their extent of agreement on some statements as the importance of ensuring the health and safety of their workers. A five-point Likert scale with 1 representing strongly disagree, through to 5 representing strongly agree was used. The data was analyzed using a Relative Agreement Index (RAI) developed for each statement by multiplying individual frequencies by their corresponding values of statements under each rank of 1-5 and dividing the sum by the product of total number of respondents and 5 (highest figure on the five-point Likert scale). The result of the analysis is presented in Table 4.4.

Table 4.4: Respondents' Rating of Importance to Managing Health and Safety

Importance	1	2	3	4	5	Total	Weighting	RAI	Rank
Prevention of physical injuries/deaths	0	2	8	15	59	84	383	0.912	1 st
Saving cost of treatment or compensation of worker accidents	2	0	8	29	45	84	367	0.874	2 nd
Prevention of job schedule delays	2	0	8	33	41	84	363	0.864	3 rd
Enhancing the image of the company	0	2	14	33	35	84	353	0.840	4 th
Achieving the project according to its definite budget	0	2	15	34	33	84	350	0.833	5 th
Enhancing worker motivation and morale	2	0	10	44	28	84	348	0.829	6 th
Enhancing worker effectiveness, efficiency and productivity	2	0	10	44	28	84	348	0.829	6 th

1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

RAI=Relative Agreement Index

From Table 4.4, it is noticeable that the highly rated importance of ensuring health and safety by management members of construction companies was the “prevention of physical injuries and deaths” with an RAI value of 0.912. The second most ranked importance of ensuring health and safety was “saving cost of treatment or compensation of worker accidents” with an RAI value of 0.874. The third, fourth and fifth ranked importance of ensuring health and safety were “prevention of job schedule delays”, “enhancing the image of the company”, and “achieving the project according to its definite budget” respectively with RAI values of 0.864, 0.840 and 0.833.

“Enhancing worker motivation and morale” and “enhancing worker effectiveness, efficiency and productivity” were both ranked sixth with an RAI value of 0.829.

Interestingly, with regard to the importance of top management members of construction companies in ensuring health and safety of workers, the results of the analysis showed that all the listed statements were significant as each had a relative agreement index greater than 0.800. This implies that all the respondents acknowledge that ensuring health and safety of workers was very important to their respective companies and the construction industry in general. The importance of ensuring health and safety among construction workers could possibly stem from the risky activities of construction processes that have raised serious health and safety concerns amongst governments, health and safety stakeholders, health and safety professionals as well as researchers over the past few decades (Enshassi and Mayer 2002; Gibb 2005). In line with the observation of Peyton (1991) that top management must take every opportunity to become involved in its company’s safety effort, it becomes apparent that the commitment of top management evidently is beneficial to ensuring and maintaining health and safety standards.

4.6 Challenges Top Management Face in Managing Health and Safety

Despite the growing awareness of occupational health and safety nowadays particularly in the construction industry, there exist some notable challenges relating to the commitment of management members of construction companies in ensuring health and safety of their workers on site. In order to find out the significant challenges in this respect, the respondents were asked to rate their extent of agreement on some statements as the challenges facing top management in the health and safety of their workers using a five-point Likert scale with 1 representing strongly disagree, through to 5 representing strongly agree. The data was analyzed using a

Relative Agreement Index (RAI) developed for each statement with the result of the analysis shown in Table 4.5.

Table 4.5: Respondents' Rating of Challenges to Managing Health and Safety

Challenges	1	2	3	4	5	Total	Weighting	RAI	Rank
Lack of top management awareness of Health and safety in construction	7	9	17	25	26	84	306	0.729	1 st
Inadequate enforcement mechanisms	6	15	14	23	26	84	300	0.714	2 nd
Lack of adequate resources to manage health and safety	5	17	12	31	19	84	294	0.700	3 rd
Inadequate personal and protective equipment	5	13	16	37	13	84	292	0.695	4 th
Poor maintenance of personal protective gear	3	16	23	28	14	84	286	0.681	5 th
Negative attitudes of workers towards health and safety	6	16	15	42	5	84	276	0.657	6 th
Low level literacy among workers	9	14	25	24	12	84	268	0.638	7 th
High cost of health and safety	11	14	31	21	7	84	251	0.598	8 th

1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

RAI=Relative Agreement Index

The result in Table 4.5 shows that “Lack of top management awareness of Health and safety in construction sites” was ranked in the first position as a challenge to the commitment of top management in ensuring worker health and safety on site the highest RAI of 0.729.

“Inadequate enforcement mechanisms” was the second highest ranked challenge to management commitment of ensuring health and safety. This had an RAI of 0.714.

“Lack of adequate resources to manage health and safety” was the third highest ranked challenge to management commitment of ensuring health and safety with an RAI of 0.700. Another related challenge was “inadequate personal and protective equipment” ranked fourth with an RAI of 0.695. This is particularly true for the small and medium firms because they are usually faced with how to allocate the meagre resources they have to fulfil business functions. These limited financial and human resources are stated as factors that impact negatively on health and safety.

As noted by Crumley (2014), adequate funding is a key factor influencing management commitment to health and safety. A typical occupational safety and health program will require funds and resources for hazard abatement, special assessments, equipment maintenance, facility upkeep, program promotion, awards and recognition, multi-media, etc. Adequate funding is a key challenge to health and safety as SMEs particularly in developing countries are unlikely to commit sufficient amounts and the right type of resources in the management of health and safety.

Also, “poor maintenance of personal protective gear”, “negative attitudes of workers towards health and safety” and “low-level literacy among workers” were ranked fifth, sixth and seventh respectively with RAI values of 0.687, 0.657 and 0.638. These challenges influence management commitment to health and safety as many construction site workers have not received formal education making the interpretation of contract documents and health and

safety measures difficult. The result of the low level of literacy among workers is a lack of understanding on many issues bordering on the health and safety of workers. “High cost of health and safety” with an RAI of 0.598 was the least ranked challenge influencing the commitment of management members in ensuring health and safety on site. This could be due to the overriding importance of ensuring health and safety of construction workers on site irrespective of its cost provided there are adequate resources.

4.7 Suggestions on Improving Management Commitment to Health and Safety

Interestingly, the majority of the respondents provided suggestions to enhance management commitment to health and safety. Varying suggestions were provided by the respondents with the most common ones relating to enforcing safety mechanisms, providing adequate protective gear, providing incentives, training, raising safety awareness and resourcing safety departments. Some typical suggestions made by the respondents are as follows:

“Management members should provide incentives to workers who maintain high safety standards whether in cash or in kind”

Site engineer

“Training and conferences on health and safety should be organized for workers every quarter of the year if not every six months to update the worker”

Site engineer

“My suggestion to enhance management to health and safety workers is that should take health and safety as important to prevent accidents in their organization”

Site engineer

“Every organization should have health and safety department ensure the safety of the workers on site”

Quantity surveyor

“I suggest that the law governing health and safety in the construction industry must be enforced strongly to avoid serious injuries and loss of profit margins in the industry”

Construction manager

“A lot of resources should be committed to operations on site to ensure absolute health and safety to personnel and operatives on site”

Quantity surveyor

“Special funds should be allocated to train employee on how to ensure health and safety at home and the workplace”

Site engineer

“Regular provision of safety and healthcare equipment on site”

Construction manager

“Health and safety officers should be visiting organizations”

Construction manager

It is not surprising that the majority of the respondents were able to make at least one suggestion to enhance the commitment of top managers to the health and safety of their workers. This brings to the fore the importance of occupational health and safety particularly to the construction industry considering its reputation for high incidence of occupational related accidents.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides the summary of the research findings and concludes the study. In addition, recommendations are provided in this chapter to enhance the commitment of top management members to the health and safety of their workers.

5.2 Summary

This study was conducted to explore the commitment of construction top management members in managing the health and safety of workers. The key research questions were:

- What are the key factors that influence top management commitment to health and safety of workers?
- What are the constraints to managing health and safety?

Data for the research was obtained through a questionnaire survey with top management members of construction companies in the Ashanti Region who also belonged to specific construction related professions. The following subsections provide a summary of the findings.

5.2.1 Factors Influencing Top Management Commitment to Health and Safety of Workers

From the analysis, it became apparent that construction health and safety should be of primary concern to all parties in the construction industry including employers, employees, governments and project participants. In the case of top management members, a growing number of them tend to be committed to the health and safety of their workers. From the analysis on the roles of the respondents in ensuring health and safety of their workers, it became apparent that the respondents had various active roles relating to ensuring the health and safety of their workers on site including guidance, training, education, advice and monitoring worker activities. On this note, the majority of the respondents expressed that their management members were very committed to workers health and safety. For instance, 44% and 27% of them indicated that the overall commitment of their management members to health and safety was high and very high respectively. Empirically, the respondents were asked to rate some factors influencing top management commitment to health and safety management of their workers in their respective companies using a five-point Likert scale. Ranking of the factors revealed that “Planned health

and safety training for workers”, “Top management awareness of Health and safety in construction sites”, “Our procedures meet the requirements of the health, safety and welfare provisions in conditions of the contract”, “Our procedures meet the requirements of the health, safety and welfare provisions in Labour Act, 2003”, “Communicating health and safety performance to employees”, “We undertake formal site health and safety inspections” and “We have a well laid out health and safety policy” were the top rated factors respectively with relative agreement index (RAI) values greater than 0.800. Interestingly, the statement that “We have a well laid out health and safety budget” had an an RAI value of 0.790 and was not rated among the top factors despite its importance.

5.2.2 Importance of Ensuring Health and Safety of Workers

With regard to the importance of top management members of construction companies in ensuring health and safety of workers, the results of the analysis showed that all the listed statements were significant as each had a relative agreement index greater than 0.800. This implied that all the respondents acknowledged that ensuring health and safety of workers was very important to their respective companies and the construction industry in general. However, the top ranked importance were “prevention of physical injuries and deaths”, “saving cost of treatment or compensation of worker accidents”, “prevention of job schedule delays”, “enhancing the image of the company”, and “achieving the project according to its definite budget” respectively.

5.2.3 Challenges Top Management Face in Managing Health and Safety

Despite the growing awareness of occupational health and safety nowadays particularly in the construction industry, there exist some notable challenges relating to the commitment of management members of construction companies in ensuring health and safety of their workers

on site. Typical top rated challenges by the respondents were “Lack of top management awareness of Health and safety in construction sites”, “Inadequate enforcement mechanisms”, “Lack of adequate resources to manage health and safety” and “Inadequate personal and protective equipment”. “High cost of health and safety” was the least ranked challenge influencing the commitment of management members in ensuring health and safety on site. This could be due to the overriding importance of ensuring health and safety of construction workers on site irrespective of its cost provided there are adequate resources.

5.2.4 Suggestions on Improving Management Commitment to Health and Safety

Interestingly, the majority of the respondents provided at least one suggestion to enhance management commitment to health and safety. This implied that ensuring health and safety of workers was very important in the construction industry considering its reputation for high incidence of occupational related accidents. The most common responses however related to enforcing safety mechanisms, providing adequate protective gear, providing incentives, training, raising safety awareness and resourcing safety departments.

5.3 Conclusion

This study was conducted to explore the commitment of construction top management members in managing the health and safety of workers. The study has shown that many top management members are committed to the health and safety of their workers. From the analysis it was found that the top management members of the construction companies play active roles relating to ensuring the health and safety of their workers on site including guidance, training, education, advice and monitoring worker activities. In this regard, it can be concluded that the majority of top management members were adequately committed to workers health and safety.

The factors that highly influence management committed were found to be related to planned health and safety training, management awareness of health and safety, procedures that meet the requirements of the health, safety and welfare provisions in conditions of the contract and Labour Act, 2003, as well as communication of health and safety performance.

The research has established that ensuring health and safety of workers was very important to management. This was because of the benefits of health and safety including the prevention of physical injuries and deaths, cost saving, prevention of job delays, as well as enhancing the image of the company.

Despite the importance of occupational health and safety, there are notable challenges relating to the commitment of management members of construction companies in ensuring health and safety of their workers on site including lack of management awareness, inadequate enforcement mechanisms, and lack of adequate resources. The study however, concludes that, with adequate resources, top management members of construction companies would be more committed to ensuring health and safety of their workers given its overriding importance and benefits irrespective of its cost.

5.4 Recommendations

The following recommendations are suggested in order to enhance the commitment of top management members of construction companies to the safety and health of their workers.

- To foster a Culture of Safety and demonstrate commitment, management should participate in occupational health and safety meetings. This will allow them to respond to safety issues and concerns and develop solutions to aid in the implementation of their own health and safety programs.

- Since health and safety programs should be organization wide, construction workers should work closely with and under the direction of management in support of the safety and health programs and suggest initiatives to promote general safety awareness in the workplace.
- Management members should afford workers the opportunity to voice their concerns and obtain immediate and direct feedback from the individuals charged with ensuring their workplace is safe and healthful. Collaboration to this extent bolsters a trusting work relationship between management and the workforce and establishes a layer of accountability for both sides.
- The administration of a health and safety program requires funding and resource allocation to exist or thrive. A typical program will require funds and resources for hazard abatement, special assessments, equipment maintenance, facility upkeep, program promotion, awards and recognition, etc. Management's willingness to budget appropriately for the administration of their safety program is indicative of their commitment. In this regard, management members should have a definite budget for their safety and health programs.
- Contractors should be compelled by the national safety agencies to draw up safety responsibilities and authority structure which should be available in every site to inform all parties as to their responsibilities as far as health and safety is concerned.

Further Research

This research explored the commitment of top management members of construction companies on the health and safety of workers. The research was based on only the management

members of the construction companies as they were the target population for the study. Further research can be conducted to incorporate the views of the site workers and operatives on the commitment of their management members.

REFERENCES

- Abdelhamid, T. and Everett. S. (2002). Identifying root causes of construction accidents, *Journal on Construction Engineering and Management*, Vol. 26 pp. 52-60
- Amarh, C. (2014). Improving Safety Performance of Ghanaian Building Contractors. Master's thesis, Department of Building Technology, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.
- Anaman, K. A. and Osei-Amponsah, C., (2007). Analysis of Causality Links Between The Growth Of The Construction Industry And Growth Of The Macro-Economy In Ghana, *Construction Management & Economics*, Vol 25, pp. 951-961.
- Blotzer, M. (2005). Computers: Construction Health and Safety Resources, *Occupational Hazards*, February 18, 2005, Penton Media, Cleveland, OH, USA.
- Crumbley, J. S. (2014). Management Commitment In Occupational Safety And Health As It Relates To Federal Agency Programs. Master's Thesis, Eastern Kentucky University, USA.
- Danso, A. 2005. Strategic planning practice of construction firms in Ghana. *Construction Management and Economics* 23, 163-168.

- Datta, M. (2000). Challenges Facing the Construction Industry in Developing Countries. Proceedings of the 2nd International Conference on Construction in Developing Countries.
- Davies, V.J. and Tomasin, K. (1996). Construction Safety Handbook, (2nd edition). Thomas Publishing, London.
- Dėjus, T. (2007). ACCIDENTS ON CONSTRUCTION SITES AND THEIR REASONS. Journal of Civil Engineering and Management. Vilnius: Technika, Vol 10, p. 93-98.
- Enshassi, A. and Mayer, P. E. (2002). Analysis of construction site injuries in Palestine. In: Proceedings of Triennial Conference CIB W099 Implementation of Safety and Health on Construction Sites (edited by Rowlinson, S.). Department of Real Estate and Construction, the University of Hong Kong, Hong Kong, 29-34.
- Gibb, A. G. F. (2005). Rethinking and revitalising occupational health in construction - A global challenge. In: Proceedings of the 4th Triennial International Conference of the CIB W99 Working Commission (edited by Haupt, T. C. and Smallwood, J.). Rethinking and Revitalizing construction Safety, Health, Environment and Quality. Construction Research Education and Training Enterprises, Port-Elizabeth-South Africa, 1-14.
- Halender, M. and Holborn, M. (1991). Sociology Themes and Perspectives. (3rd edition), Collins Educational, London
- Hamid, A. R. A., Singh, B., Yusof, W. Z. W. and Yang, A. K. T. (2004). Integration of safety, health, environment and quality (SHEQ) management system in construction: a review. Jurnal kejuruteraan awam 16(1), 24-37.
- Hinze, G. and Wilson, J. (2000). Moving Towards a zero injury objective. Journal of Construction Engineering and Management. 399-403.
- HSE (2003). Casual factors in construction accidents, UK.
- ILO (2001). The construction industry in the twenty-first century: its image, employment prospects and skills requirements. International Labour Office, Geneva. Tripartite

- Meeting, Document number TMCIT/2001. Accessed on 30th May 2018 from <http://www.ilo.org/public/english/dialogue/sector/techmeet/tmcit01/tmcitr.pdf>
- ILO. (2005). Prevention: A global strategy. Promoting safety and health at work. The ILO Report for World Day for Safety and Health at Work International Labour Organisation, Geneva, Switzerland. Accessed on 30th May 2018 from <http://www.ilo.org.pk/informationfiles/Prevention%20A%20Global%20Strategy.pdf>
- Kartam, N.A. and Bouz, R.G. (1998). Fatalities and Injuries in Kuwait Construction Industry. *Accident Analysis and Prevention*, 30 (6), pp. 805-814.
- Kheni, Nongiba Alkanam (2008). Impact of health and safety management on safety performance of small and medium-sized construction businesses in Ghana, PhD thesis, Department of Civil Engineering, Loughborough University, UK
- Kothari, C. R. (2004). *Research Methodology: Methods and Techniques (Second Edition)*, New Age International Publishers.
- Larcher, P. and Sohail, M. (1999). Review of Safety in Construction and Operation for the WS&S Sector-A Literature Review: Part I. UK: Loughborough University.
- Laryea, S. and Sarfo M. (2010), Health and safety on construction sites in Ghana, In: The Construction, Building and Real Estate Research Conference of the Royal Institution of Chartered Surveyors, Dauphine Université, Paris, France. Accessed on March 14th 2018 on <http://centaur.reading.ac.uk>.
- Murie, F. (2007). Building safety - An international perspective *International Journal of Occupational Environment and Health* 13, 5-11.
- Occupational Safety and Health Administration. (2016). *Recommended Practices for Safety & Health Programs in Construction*. Retrieved on 10/7/2018 from https://www.osha.gov%2Fshpguidelines%2Fdocs%2F8524_OSHA_Construction_Guidelines_R4.pdf&usg=AOvVaw36m1VhuHeXhkDN0uGkRB0c

- Ofori, G. (2000). Challenges of construction industries in developing countries: lessons from various countries, Proceedings of the 2nd international conference of the CIB TG29 on Construction in Developing Countries: Challenges facing the construction industry in developing countries 15-17 November 2000, Gaborone, Botswana, pp.1-3.
- Peyton, R. (1991). Construction Safety Practices and Principles. Van Nostrand Reinhold, New York, 1991.
- Suazo, G. A. R. and Jaselskis, E. J. (1993). Comparison of construction safety codes in United States and Honduras. *Journal of Construction Engineering and Management* 119(3), 560-572.
- Tam, C. M. and Fung, I. W. H. (1998). Effectiveness of safety management strategies on safety performance in Honk Kong. *Construction Management and Economics* 16, 49-55.
- Taylor, G., Easter, K. and Hegney, R. (2004). *Enhancing Occupational Safety and Health*. Elsevier Butterworth-Heinemann, Oxford.
- Vassie, L., Tomàs, J. M. and Oliver, A. (2000). Health and safety management in UK and Spanish SMEs: a comparative study. *Journal of Safety Research* 31(1), 35-43.
- Yankah, K. (2012). Health and Safety Management Practices by Building Contractors in the Ashanti Region. Master's thesis, Department of Building Technology, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

APPENDIX
RESEARCH QUESTIONNAIRE

UNIVERSITY OF EDUCATION, WINNEBA (UEW)
COLLEGE OF TECHNOLOGY EDUCATION, KUMASI

RESEARCH TOPIC

**“EXPLORATORY STUDY OF THE COMMITMENT OF TOP MANAGEMENT OF
CONSTRUCTION FIRMS TOWARDS HEALTH AND SAFETY OF WORKERS”**

This research is being conducted as part of a graduate study in UEW. The information obtained from this survey shall be kept anonymous and completely confidential and used for research purposes only. Your participation in this survey is much needed and I will be grateful if you could answer the following questions. I would like to thank you for your cooperation in completing these questions.

Please respond to the questions by either writing in the blank space provided or ticking in the appropriate space provided.

PART ONE: BACKGROUND INFORMATION

1) Please indicate your role/position in the construction organisation

- | | |
|-------------------------------------|---------------------------------|
| a) Construction company manager [] | b) Contracts Engineer [] |
| c) Site Engineer [] | d) Project Manager [] |
| e) Safety Officer [] | f) Other (please specify) |

2) What is your highest educational qualification?

- a) CTC [] b) HND []
- c) BSc [] d) MSc []
- e) PhD [] f) Other (please specify).....

3) How long have you been in professional practice?

- a) Less than 5years [] b) 5 – 10years []
- c) 11 – 15years [] d) Above 15years []

4) What is the sector type your construction organisation works for?

- a. Public b. Private c. Both

5) What type of construction does your company undertake?

- a. Building construction b. Road construction
- c. Civil works d. General Construction
- e. Other (please specify).....

PART TWO: FACTORS INFLUENCING COMMITMENT TO HEALTH AND SAFETY OF WORKERS

6) What is your role in ensuring health and safety of workers on site?

7) How would you describe the overall commitment of management members to ensuring health and safety of workers?

- a) Very low []
- b) Low []

c) Moderate []

d) High []

e) Very high []

8) Based on your experience, what is your extent of agreement on the following as importance of the health and safety performance in your construction organisation? Please tick in the appropriate space provided. The range of weighting is from 1 to 5 as shown in the table below:

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Statements		1	2	3	4	5
a)	Enhancing the image of the company					
b)	Prevention of physical injuries/deaths					
c)	Enhancing worker motivation and morale					
d)	Saving cost of treatment or compensation of worker accidents					
e)	Enhancing worker effectiveness, efficiency and productivity					
f)	Prevention of job schedule delays					
g)	Achieving the project according to its definite budget					

9) Based on your experience, what is your extent of agreement on the following health and safety management processes as applicable in your construction organisation? Please tick in the appropriate space provided. The range of weighting is from 1 to 5 as shown in the table below:

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Factors		1	2	3	4	5
a)	We have a well laid out health and safety budget					
b)	Top management support of Health and safety in construction					
c)	We have an effective internal health and safety department					
d)	We have a well laid out health and safety policy					
e)	We have a health and safety committee					
f)	We undertake formal site health and safety inspections					
g)	Our procedures meet the requirements of the health, safety and welfare provisions in conditions of contract					
h)	Our procedures meet the requirements of the health, safety and welfare provisions in Labour Act, 2003					
i)	Our procedures meet the requirements of the Health, safety and welfare provisions in Factories, Offices and Shops Act, 1970					
j)	Our procedures meet the requirements of the Health, safety and welfare provisions in Workmen's Compensation Law, 1987					
k)	Communicating health and safety performance to employees					
l)	Planned health and safety training for workers					

PART THREE: CHALLENGES TOP MANAGEMENT FACE IN MANAGING HEALTH AND SAFETY

10) Based on your experience, what is your extent of agreement on the following as barriers to health and safety performance standards in your company? Please tick in the appropriate space provided. The range of weighting is from 1 to 5 as shown in the table below:

1	2	3	4	5
----------	----------	----------	----------	----------

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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Barriers		1	2	3	4	5
a)	Low level literacy among workers					
b)	Negative attitudes of workers towards health and safety					
c)	High cost of health and safety					
d)	Lack of adequate resources to manage health and safety					
e)	Lack of top management awareness of Health and safety in construction sites					
f)	Inadequate enforcement mechanisms					
g)	Inadequate personal and protective equipment					
h)	Poor maintenance of personal protective gear					

11) What suggestions would you provide to further enhance management's commitment to health and safety of workers in your construction organization?
