

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

KUMASI, GHANA

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

**DEPARTMENT OF OCCUPATIONAL AND ENVIRONMENTAL HEALTH AND
SAFETY**



**EFFECT OF OCCUPATIONAL ACCIDENTS ON JOB PERFORMANCE; A CASE OF
A CONSTRUCTION FIRM IN KUMASI-GHANA**

BY

AFIA AGYEMANG-BENIAKO

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

KUMASI, GHANA

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

**EFFECT OF OCCUPATIONAL ACCIDENT ON JOB PERFORMANCE; A
CASE OF A CONSTRUCTION FIRM IN KUMASI-GHANA**

**A THESIS SUBMITTED TO THE DEPARTMENT OF OCCUPATIONAL AND
ENVIRONMENTAL HEALTH AND SAFETY,**

**SCHOOL OF GRADUATE STUDIES, KWAME NKRUMAH
UNIVERSITY OF SCIENCE AND TECHNOLOGY, IN PARTIAL
FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF
MASTER OF SCIENCE IN OCCUPATIONAL AND ENVIRONMENTAL
HEALTH AND SAFETY.**

BY

AFIA AGYEMANG-BENIAKO

(PG 5234318)

NOVEMBER 2019

DECLARATION

I hereby declare that except for the reference to other people's works which have been acknowledge, this work is the result of my own findings.

I further declare that this work has neither in whole nor in part been presented for any degree elsewhere.

AGYEMANG-BENIAKO AFIA

(PG 5234318)

.....

Signature

Date

Certified by

PROF. ELLIS OWUSU-DABO

.....

Signature

Date

Certified by

Dr. SAM NEWTON

.....

Signature

Date

ABSTRACT

The construction industry is besieged with accidents. Incidents of accidents at the construction site are higher in developing countries than developed countries. Safety at the construction site remains the poorest of all when compared with other manufacturing industry like the furniture and fixtures, fashion industries among others. The construction industry comprises of several people with different backgrounds and different tasks performed by them. The study examined the effect of occupational accident on job performance; a case of a construction firm in Kumasi-Ghana. 5 section questionnaires enclosing questions on demographic characteristics, general knowledge on safety and legalities, accident occurrence, safety management systems and employee attitude were administered to 110 workers of the construction firm. Chi-square and Pearson's Correlation Coefficient(r) were statistical tools used for the analysis of results. The result established a weak negative correlation (**-0.164**) between accident and job performance (labor productivity). The association between the accidents occurrence and absenteeism was statistically not significant ($\chi^2 = 0.4291$; **d.f. = 1**; **p > 0.512**) and a significant association was found between nature of accident and absenteeism ($\chi^2 = 6.7360$; **d.f. = 1**; **p < 0.009**). The results of the study revealed a higher knowledge of safety legalities and practices and a positive attitude on safety from respondents, whereas low records of accidents were recorded among the construction workers of the firm implying a good safety management system. The study concludes that a good safety management system and a positive employee attitude would reduce absenteeism, occupational accidents and further increases labor productivity as demonstrated in the conceptual framework.

DEDICATION

I dedicate this research work to the Lord Almighty for his faithfulness and guidance throughout my study.

I further dedicate this study to my siblings and parents, Mr Kwadwo Adiyia Beniako and Mrs Adwoa Afriyie Beniako for their undying support and encouragement.



ACKNOWLEDGEMENT

I am very thankful to the merciful father in heaven for all his ways are marvelous! He has indeed been my shield and my redeemer.

My sincere gratitude goes to my colleagues from the department of Occupational and Environmental Health and Safety, and Dr. Sam Newton who in diverse ways helped in the realization of my thesis.

I would first thank my supervisor, Prof Ellis Owusu-Dabo for his cooperation as well as Dr. Jonathan Horgah and Dr. Sulemana Alhasan for their incredible contributions.

I would further acknowledge the staff of Annason Company Limited for their immense contribution and particularly single out the managing director, Mr Samuel Awisi Amoako for all the opportunities I was given to conduct my research. Thank you!

My appreciation would not be enough if I don't express my profound gratitude to my parents, siblings, friends and loved ones for their unfailing encouragement throughout my journey in academia and research.

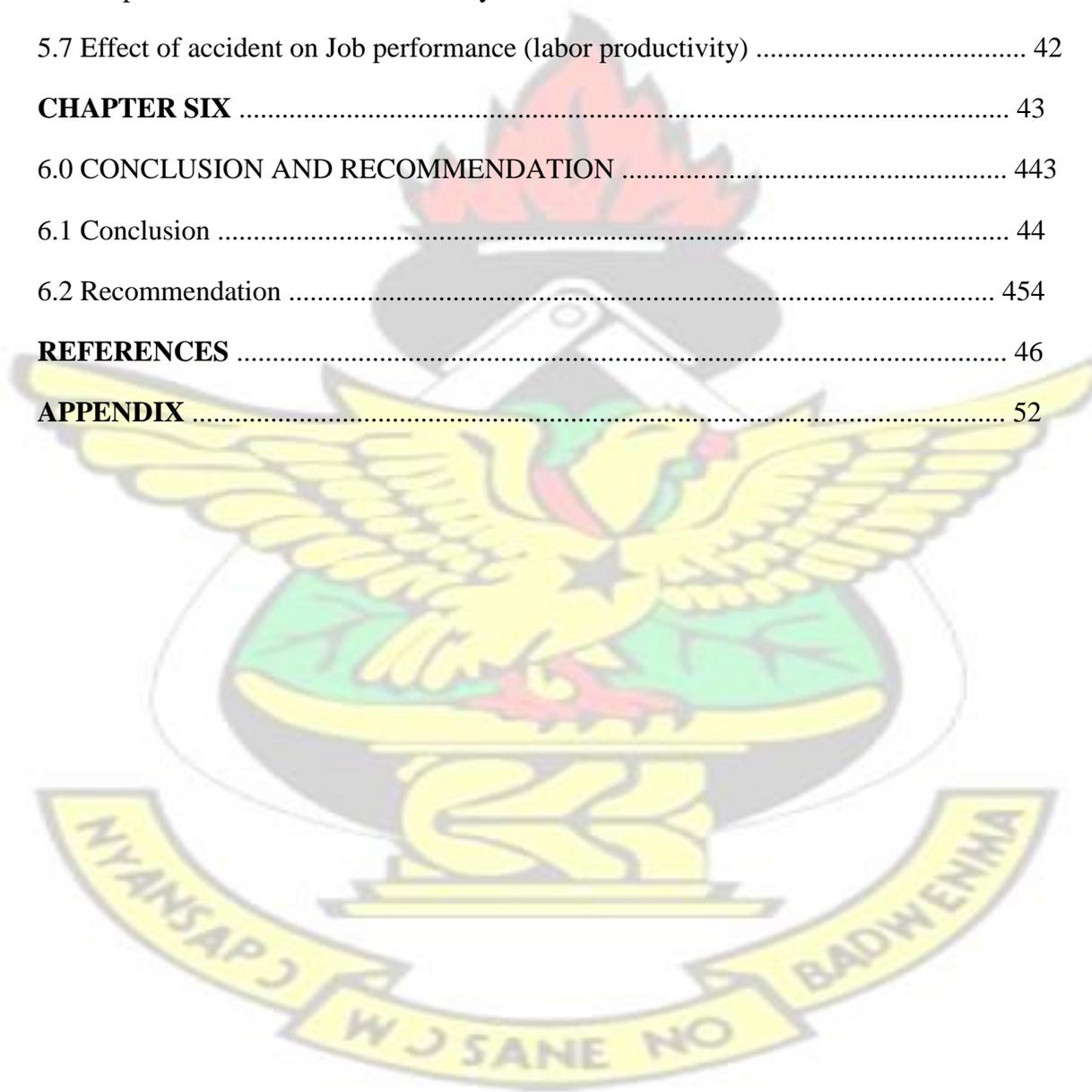
This accomplishment would not have been possible without them.

TABLE OF CONTENT

DECLARATION	1
ABSTRACT	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF TABLES	viii
LIST OF FIGURES	ixi
LIST OF ABBREVIATIONS	x
CHAPTER ONE	1
1.0 INTRODUCTION	1
1.1 Background Of The Study	1
1.2 Problem Statement	3
1.3 Significance Of The Study	5
1.4 Conceptual Framework	6
1.5 Research Questions	7
1.6 Study Objective	7
1.7 Specific Objectives	8
1.8 Scope of the Study	8
1.9 Organization of Report	9
CHAPTER TWO	10
2.0 LITERATURE REVIEW	10
2.1 Introduction	10
2.2 Occupational Accident	11
2.2.1 Causes and Effect of Construction Accidents on Absenteeism	12
2.3 Influence of Employee Attitudes on OHS	14
2.4 Occupational Health and Safety Management Systems	15

2.5 Job Performance/Productivity	17
2.6 Occupational Health and Safety Practices in Ghana	19
CHAPTER THREE	21
3.0 METHODOLOGY	21
3.1 Research Methods and Design	21
3.2 Profile of The Study Area	21
3.3 Data Collection Techniques and Data Tools	22
3.4 Study Population.....	23
3.5 Study Variables	23
3.6 Sampling	24
3.7 Pre-testing	25
3.8 Data Handling	25
3.9 Data Analysis	25
3.10 Ethical Consideration	26
3.11 Limitation of the Study	26
CHAPTER FOUR	27
4.0 DATA ANALYSIS AND PRESENTATION	27
4.1 Introduction	27
4.2 Demographic characteristics of respondents	27
4.3 Accident Occurrence Survey	29
4.4 Knowledge on Health and Safety Practices	31
4.5 Safety Management Systems.....	32
4.6 Attitude on Occupational Health and Safety	33
4.7 Effect of Occupation Accident on Job Performance	34
CHAPTER FIVE	37
5.0 DISCUSSION OF RESULTS	37

5.1 Introduction	37
5.2 Demographic characteristics	37
5.3 Association between Accident type and Nature on Absenteeism	38
5.4 Respondent's Knowledge on legalities of Occupational Health and Safety practices	40
5.5 Respondents Awareness of Safety Management Systems	41
5.6 Respondent Attitude towards Safety and Health	42
5.7 Effect of accident on Job performance (labor productivity)	42
CHAPTER SIX	43
6.0 CONCLUSION AND RECOMMENDATION	443
6.1 Conclusion	44
6.2 Recommendation	454
REFERENCES	46
APPENDIX	52



LIST OF TABLES

v

Table 3.1 Variables enumerated in the Questionnaire.....	22
Table 4.1: Demographic characteristics of respondents.....	27
Table 4.2.....	28
Table 4.3 Relationship between involvement in accident and work attendance.....	29
Table 4.4 Relationship between nature of accident and work attendance.....	29
Table 4.5 Respondents Knowledge on Health and Safety Practices.....	30
Table 4.6 Respondents assessment of safety management systems.....	31
Table 4.7 Respondents attitude towards health and safety practices.....	32
Table 4.8 Accident records.....	33
Table 4.9 Labor Productivity.....	33
Table 4.10 Pearson correlation of accidents /injuries and job performance in terms of ...	34



LIST OF FIGURES

Figure 1.1 Conceptual Frame work of impact and cost of occupational accidents and injuries in construction.....	7
Figure 2.1	18
Figure 3.1	22
Figure 4.1 Scatter diagram showing the relationship between investment in health and safety and job performance (labor productivity).	36

LIST OF ABBREVIATIONS

EP	Employee Performance
ETA	Employment and Training Administration
HPM	Health and Productivity Management
ILO	International Labor Organization
JS	Job Satisfaction
OHS	Occupational Health and Safety
OSHA	Occupational Safety and Health Administration
SMS	Safety Management System
WHO	World Health Organization
WMSD	Workplace Musculoskeletal Disorder

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of The Study

The construction industry is besieged with accidents. Incidents of accidents at the construction site are higher in developing countries than developed countries (Idoro, 2008). Safety at the construction site remains the poorest of all when compared with other manufacturing industry like the furniture and fixtures, fashion industries among others.(Mohamed, 2011). The construction industry comprises of several people with different backgrounds and different tasks performed by them. These workers are gathered at the site at different periods of the construction process making the construction industry more complex and controlling of things at the sites tend to be difficult. Due to the different backgrounds and tasks carried out by the workers compared to factories and industries, accidents are inevitable. It is well noted that, the frequent changes in tasks carried out by workers in the construction industry, makes construction industry mainly dynamic (Okoye *et al.*, 2016).

Accidents are unexpected events and an unplanned cost in any organization including construction. Nevertheless, accidents and injuries are still on rise in most organization with various minor and major injuries as a result of the working environment. Some of these accidents somewhat result in fatality. According to the International Labor Organization (2015), the rapid urbanization and industrialization has made work – related illness and injuries part of employment. Occupational Health and safety Authorities (OSHA) have secure safety standards which aims to improve a lot of performances in construction sites positively.

In the construction sector, personnel with different kind of skills i.e. unskilled, semi-skilled and skilled are employed for each service. Majority of them are unskilled since the work is an option for many people (especially farmers) who run into the job without any formal training. Growth has come into the construction industry yet, the industry faces numerous harms, injuries and accidents acquired by the workers.

Accident is said to be spontaneous and unanticipated that disrupts the normal routine of one's duties (Arachchige and Ranasinghe, 2015). An occupational accident is any accident that occurs due to the operation of one's job or task. Accidents are mostly unavoidable and of great disadvantage in the construction industry. For accidents to be mitigated in the construction industry, it means that proper safety measures must be put in place by management or supervisors. For safety to exist at the construction industry, it is important that leading members must show high commitment to safety of workers (Granson, 2014).

Being at risks to health and safety exist at all workstations. These risks are not restricted to developing countries only but the developed countries as well. In a publication by the (International Labour Organization, 2015), 2.34 million people died from work-related injuries or illnesses of which 2.08 million are illness and 321,000 from accidents. It further estimated that there were 317 million nonfatal accidents leading to absenteeism. Incidence of accident in high risk organizations like that of the manufacturing sector, constructions and mines are so fatal that it can cause both major environmental and personal damage which affect employees beyond the workplace. Safety climate must therefore exist and since construction work involves working away from the designated office, it is important that supervisors implement safety measures to curtail these occurrences of accidents. Pressure from supervisors to increase production in order to catch up

delays must be controlled since this can lead to accidents. Job performance in the construction industry is improved through safety precautionary measures. Safety measures must be enacted and implemented at different steps in the construction processes. Training of workers, training plan, and sufficient inspection are key ways of ensuring safety and preventing accidents in the construction industry (Akyuz and Celik, 2014). With supervisors being the leaders, key persons and immediate staff for the employees, their roles and duties are essential for maintenances of safety in the construction industry or sites (Hardison *et al.*, 2014). When these things are achieved, the performance of the construction industry will be high. A key thing in preventing accidents in the construction industry will be the consideration of certain factors such as Resources Factor, Management Factor, Personal Factors and Incentive Factor Relationship.

Above these factors is the need for personal commitment which is essential for job performances (Ismail, Doostdar and Harun, 2012). Despite all these measures put in place by most construction companies, there exist incidents of accidents and the rate is very high. (Muiruri and Mulinge, 2014)

1.2 Problem Statement

The level of occupational safety and health compliance and implementation in Africa is generally low compared with the other continents of the world. (Regional committee for Africa Report, 2014) Occupational health and safety problems resulting in injuries and accidents are almost similar to public health problems like child mortality, malnutrition, and safe water supplies among others which is on the rise in sub-Saharan Africa. The World Health Organization (1995) stated that, when Occupational Health and Safety is not properly observed, it drastically has a toll on the work output of the worker and this may in turn affect the economic turn out by significant proportions and subsequently will affect a nation's Gross National Product. Research by Takala (2002)

estimates that Occupational deaths, diseases, and illnesses constitute roughly 4% loss of the Gross Domestic Product globally.

It is clear that construction workers face conditions that pose danger to them. Occupational health and safety legislation in Ghana is not comprehensive, the accidents at construction site are alarming due to poor regulations by industries (Puplampu and Quartey, 2012). Although some construction companies have safety policies in place, they are not effectively implemented to zero accidents and ill health conditions. The Department of Factory Inspectorate has entreated factories and industries to report accidents but there are little or no data on reported workplace injuries and accidents. It is quite challenging implementing policies because of the missing link in the roles of the employees and the management in terms of effectiveness of safety at the work place (Meswani, 2008).

Studies have been done to establish that lack of understanding in construction site management on safety and health and non-existence of site occupational and safety model are attributable factors of high accident rates in construction firms (Alhajeri, 2014). Efforts therefore must be made by both the employees and the managers to prevent these accidents in construction.

Human resource on the other hand is an important asset an organization has and efficient and an effective use of human resource foresees any organization at top level and increases organizations productivity and the country's economy at large. Shikdar (2003) is of the view that, poor occupational health and safety practices increases the risk of incidence of accident at the workplace and ultimately affect job performance therefore institutions that have made provisions for issues of health and safety usually have little or minimal records of injuries and accidents.

Zhou et al., (2015) also stated that most research work in the field of construction industry, pertain mainly to safety management. With construction sector reported to have the highest death rate as

compared with other industries, it is therefore important to bring into light the effect of occupational accident on job performance.

However, little assessment has been done globally on the effect of these accidents on job /employee performance therefore this study sought to estimate the impact of occupational injuries and accidents on job performance and analyze how OSH management and employee attitude towards OSH can be properly observed to improve performance in the construction sector in Ghana. Therefore, suffusing in health and safety at work has to be regarded as an investment rather a cost.

1.3 Significance Of The Study

This study sought to establish the impact of occupational accident and injuries on job performance adding the effects and recommendations for future policies. It will moreover help bring on the spot evidence that ignorance of occupational managements and safety practices affects productivity, incur direct and indirect loss/cost to the company, human resource and the country at large. Since not much or very little research has been done with respect to the topic in Ghana, the study will serves as an insight of what is happening in construction firms. The results from this study was expected to contribute immensely to better understanding of the issue with regards to the occupational accidents and the findings will serves as a channel for improvement of occupational health and safety practices of workers and employers. The findings of this study will serve as a basis for offering purposeful suggestions to stakeholders in construction and also be useful in improving and preventing occupational accidents in the future through sustainable measures such as planning and control, workers participation and monitoring.

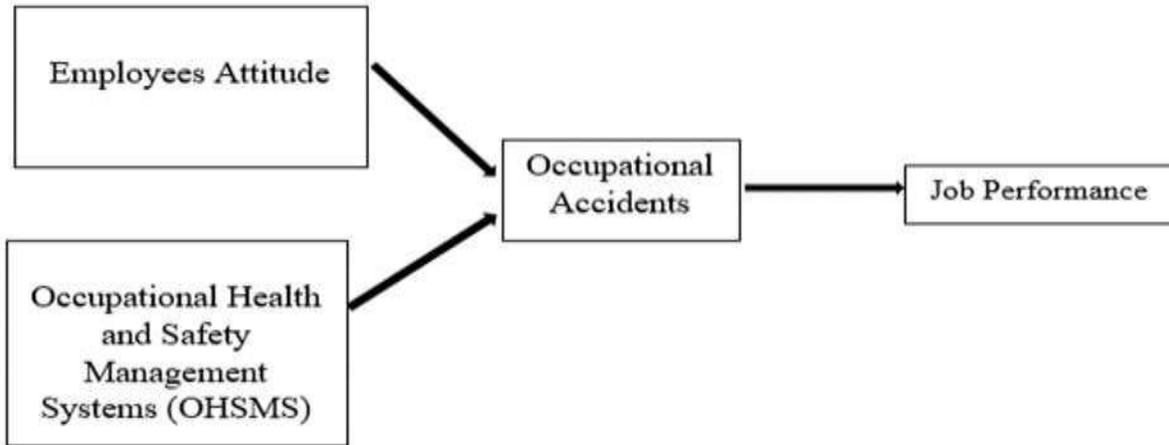
Another significance of the study is that the findings can be used to examine the relationship between accidents and job performance and further suggest ways for effective usage of safety

materials and provide policy makers in construction with literature in appraising activities and programs associated with the prevention of occupational accident in the country and the world at large. It was expected to further serves as resource material for students/researchers who may make a related study in the future.

1.4 Conceptual Framework

The research seeks to identify the type and nature of accidents and injuries in the construction firm which is likely to affect job performance incurring both direct and indirect cost to the company, society and the employer. A conceptual framework can be deduced from research and literatures by (Adebola, 2014), (Okoye *et al.*, 2016) and (Dwomoh, Owusu and Addo, 2013) on knowledge, attitude and effect of occupational safety and accidents as;

Figure 1.1 Conceptual Frame work of impact and cost of occupational accidents and injuries in construction.



Source: Author's constructs, 2019.

This framework implies that, employee attitudes and Occupational health and safety management system of an organization has an influence on Job performance through occupational accidents.

1.5 Research Questions

The study addressed four key question;

1. What were the causes and types of accidents encountered in the construction industry?
2. What are the impacts of accidents on construction work?
3. What was the level of implementation of occupational safety and health management systems in the construction industry?

1.6 Study Objective

The main objective of the study was to investigate the association between occupational accidents and job performance in construction sector.

1.7 Specific Objectives

- i. Investigate type of occupational accidents in the construction site, cause and its effect on absenteeism.
- ii. Examine the knowledge of employees on legalities of

- occupational health and safety practices in Ghana iii. To assess employees' attitudes on Occupational health and safety. iv. To assess safety management system of the firm.
- v. Establish the relationship between occupational accidents and job performance (labor productivity)

1.8 Scope of the Study

The study seeks to bring to light the effect of occupational accidents in the performance of an organization using a construction firm as a case study. The study was carried out in a construction company operating as a building and road construction firm in Kumasi, a metropolitan city in Ghana.

The target population for this study were workers of the construction firm who had worked in the company for more than 5 years. Other workers who did not fall in the inclusion criteria were not within the scope of the study. The study covered a period of 12 weeks and the results and findings were expected to provide practical data on the effects of accidents and injuries on economic growth through implementation of safety management system.

1.9 Organization of Report

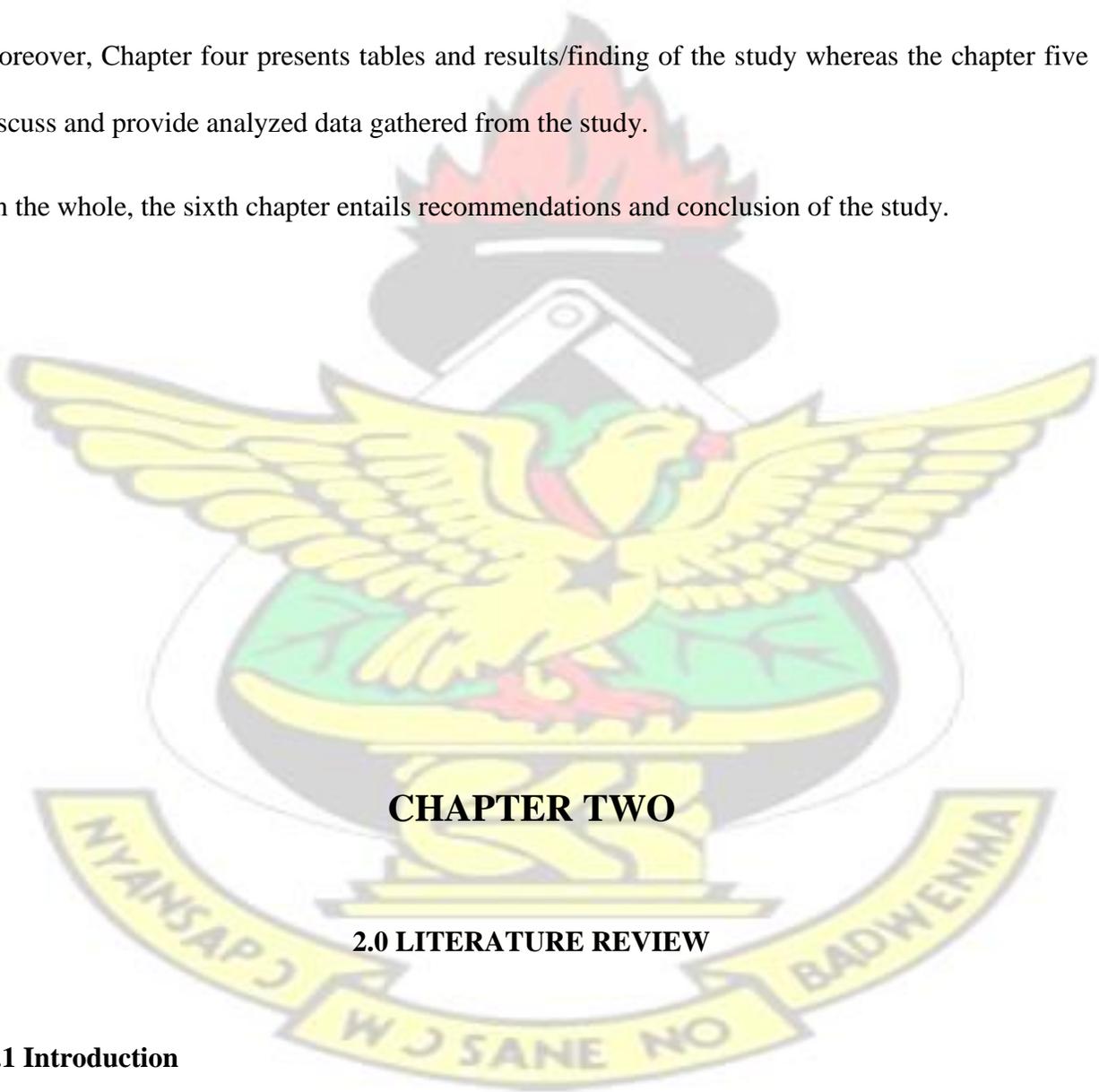
The research work is split into six (6) chapters. Chapter one captures the general introduction grouped under these headings; Background to the study, problem statement, significant of the study, conceptual framework, research questions, general objectives, specific objectives, scope of the study, and the organization of the report.

The Chapter two of the research involves the review of current related literatures on the relevant subjects under the study objectives.

Also, the Chapter three explores the various methods, tools and techniques used in data collection for the research work. These methods include administration of questionnaires and the use of statistical tool STATA.

Moreover, Chapter four presents tables and results/finding of the study whereas the chapter five discuss and provide analyzed data gathered from the study.

On the whole, the sixth chapter entails recommendations and conclusion of the study.



CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

The aim of occupational health and safety is the encouraging and continual efforts to promote the well-being of workers physically, mentally and socially. The World Health Organization (WHO)

and the International Labor Organization (ILO) define Occupational Health as the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations by preventing departures from health, controlling risks and the adaptation of work to people, and people to their jobs. This became necessary following the fact that workers are persistent exposure of workers to safety and health hazards. With effective Occupation Health and Safety Policies, the construction industry and its employee are advantaged with the reduction of accidents, cost of compensation to injured employees, loss of staff, companies" reputation enhanced among others (Cooney and Cooney, 2016).

A good practice of OHS management in an institution or firm is to exhibit better task performance and safety culture which will maximize profit and increases productivity. Safety hazards has become part of construction and many work setting that can result in immediate and sometimes damaging harm to an employee. Positive impact like employee performance are directly associated with safety at workplace and a good occupational health and safety management practices builds a positive workplace culture which will encourages creativity and innovation (Hudson, 2010)

Job performance of employees are affected when they are exposed to the dangers of health and safety hazards. Performance is defined by the outcome achieved by an individual or a group in an organization, with respect to what is done or otherwise by them. The conduct of employees in terms of both non-monetary and monetary outcomes controls the productivity of every organization. According to Ward *et.al.* (2008) an organization where employees are motivated, involving, committed and feels secured with managements systems is a sign of good health and safety management. Safety being an important issue of every organization has remained a controversial issue between employees and the management who sets out the measuring criteria

for its assessment. Job satisfaction is a psychological state of employees in a workplace, when their wishes and ambitions are achieved and they are gratified and joyed with their work and it is often measured by organizations where workers report their grievances and reactions on job related matters according to Bowen et al; (2008)

According to Pollitt (2011), supervisors are the link between management and the operative employees, therefore the best way to promote safety is involving both and failure of this may result in ergonomic hazards. Ergonomic hazard is defined by Hudson (2010) as the way work assignment are planned and executed. The injuries and accidents that result from ergonomic hazards often cause workplace musculoskeletal disorders (WMSD) affecting the muscles and the skeleton. The WMSD are experienced in construction industries.

2.2 Occupational Accident

Occupational accidents also known as work accident is the sudden incident happening at work premises or as a result of uncertain external factors resulting in fatalities or injuries whilst executing a task. This incident is common all over the world according to International Labor Organization. An unanticipated and unplanned events that causes a certain damage or injury to an individual is termed accident. (Gulhan, Ilhan and Civil, 2012).

It is important to identify and understand working conditions by examining the work area to locate and define equipment's, hazards and machines according to Hudson (2010). In high risk organizations, safety inspections are designed my management with the advice of a health and safety officer to examine and identify potential hazards whilst acquiring new machines to enhance productivity and relieve or reduce the occurrence of accidents and injuries by faulty tools.

2.2.1 Causes and Effect of Construction Accidents on Absenteeism

Employees and employers of the construction sector are expected to be mindful of their environment since construction site is one of the most hazardous environment one can find itself. The construction site is exposed to hazards such as falling objects, movements of heavy vehicles, etc.

Occupational Health and Safety has without a doubt proven over time as a measure to improve working environment and standard but yet still, there are increase number of recorded fatalities and injuries in both industrial and construction industries. The international labor organization reported an estimated 2.34million fatal work accidents and injuries. Statistics of employee's loss to chronic diseases, injuries and death as a result of a failed occupation health and safety management systems and standards in various work place is about 1.8million Ghana cedis as at 2012 (Zaney,2012).

Whilst Hamid *et.al* (2008) has proven that the main cause of occupational accidents in construction are failure of workers to comply with safety and negligence, it is in line with Mohammed and Moghimbegi (2009) study on causes of construction accident as conditions of work and employees behavioral characteristic which include noise, room temperature, falling objects, slippery floors, lack of training etc. According to (Arunkumar and Gunasekaran, 2018), causes of accidents can be classified into two namely;

1. Causes of accident by human errors
2. Causes of accident by non-human error

Generally, accidents have a marginally high effect on construction by delaying construction projects, incurring both direct and indirect cost overrun and often times ruin an organizations built name. The employee mental illness, compensation cost to productivity and accident investigation time cost a great burden to withstand. (Wang *et al.*, 2006).

Absenteeism which is a pattern of absence from a duty or obligation in construction is linked with injuries and accidents. Even though absenteeism can be caused by housing conditions, social and religious celebrations amongst others, Hanna *et al.* (2005) found that accidents and injuries play a key role in records of absenteeism in construction. Whatever construction worksite problems absenteeism may cause, surprisingly from statistical perspectives, work absenteeism in construction is relatively less common compared to private industry.

Hopkins (2014) is of the view that casual labor has a higher tenancy to be absent at work as oppose to a regular worker in the manufacturing industry. However, these off days become more problematic and can send wrong signals to colleagues who are likely to absent themselves. Research has been done on the training and use of machinery as means of accident reduction whilst little efforts has been done to ascertain the relationship between absenteeism and accidents (Goodman and Atkin, 1984).

2.3 Influence of Employee Attitudes on OHS

Employees' attitudes toward the introduction of Occupational health and safety ascertain the extent to which its implementation will be successful or not. Attitude towards OHS by employees plays an important role in the reduction of workplace accidents and injury. According to (Liao *et al.*, 2014), before workers understand that, health and safety rules and procedures of their workstation result in the effectiveness in performance depends on their attitude. Sadly, most employees do not agree to the fact that their attitude keep them safe at work.

In most countries in sub-Saharan Africa, the success of occupational safety and health administration depends on how it is interpreted by its implementers that is factored by, employees

and their attitudes towards OSHA. Employees of various workstation are key resources who have their priorities, personal obligations, beliefs and abstracts that they hold high esteem Widaningsih, Susanti and Chandra, (2018). For this reason, employees having a negative attitude towards health and safety policies implementation, will decline the efforts of the health and safety department in ensuring organizational safety culture. Safety culture is the processes in zeroing injuries and accidents by sharing work practices, embracing risks and hazard control measures.

In 2002, the Australian National Commission for Health and Safety wrote on the advantage of improving health and safety in an establishment as that of providing safe working environment using effectively the occupational health and safety management systems which in turn reduces employee's absenteeism, and employee turnover. When employees are provide with safe working environment, it has direct effect on productivity increase, positive employee/customer relationship and subordinate/management relationship.

Negative attitudes affect work performance in every establishment the same way positive attitude improves workplace performance according to Pidgeon (2011). Many research papers on employee attitude on occupational health and safety polies are in the view that, a positive workplace culture can be characterized by good practices of OHS that is associated with positive performance, reduction of incidences and accidents and increase productivity

In construction and any other high risk activities, positive attitude is acquired in two ways.

1. Employees witnessing the commitment of his/her supervisors to workplace safety
2. Employees being each other's keeper by looking out for themselves and each other on the job

2.4 Occupational Health and Safety Management Systems

Any management procedures, elements and activities that improves performance of an organization is commonly termed Safety management system.

Managing safety however is an all-inclusive effort an organization need to foster safety requirements (Strutt *et al.*, 2006). The work environment must consistently provide an atmosphere that promotes and maintains the wellbeing of all persons that operate in the organization. Organizations that are committed to health and safety have policies on ergonomics. Ergonomics focuses on the interrelationships between people and their work and specifically addresses any incidents that negatively affect physical and physiological makeup of the worker. In order for the policies to be fully implemented and proven successful, there should be a shared responsibility of all; the employer, the employee and the visitors as a whole.

The employer (manager) is the first line when it comes to promoting safety and wellbeing at the work environment. Based on responses obtained from employees' assessment, the work place processes can be modified or designed in a more friendly way. It is also important that information relating to safety be disseminated in a properly streamlined manner.

A working environment that is not healthy presents a lot of concerns. A good OHS management practice points out that managing work place accidents are vital in achieving a high employee performance. The use of OHS management systems for every organization is expected to place importance on the management systems and offer trainings on the safe operation and use of tools, various devices and appropriate employee behaviors on tasks.

According to Lim (2012), understanding the rules and the know-how of each task and tool for work as an employee increases the efficiency and safety of the job.

Occupational Safety and Health Administration (OSHA) (2015) entreats employers to conform to the following as ways to prevent and control hazards identified at the workplace:

1. Engage employees who usually have a deep understanding of situations that create hazards and insights into how they can be managed and controlled.
2. Using the hierarchy of controls, options for controlling hazards should be identified and evaluated.
3. They must ensure implementation of hazard controls according to plan.
4. They must also assess and evaluate how effective the existing controls are so as to ascertain whether to continue to provide protection or whether different controls should be used.

2.5 Job Performance/Productivity

Labor productivity according to Mostafa (2003) is the value of production each worker generates. Mathematically, labor is termed as the value of production divided by labor input. In construction works, it represents the effectiveness and efficient way the firm is able to use its resources in achieving a targeted goal of a contract. Measuring success/productivity of a construction project is very difficult. Due to the complexity in the measure of productivity, the satisfaction or dissatisfaction of a client and the projects intended objective (cost performance, time performance and quality performance) can be used (Osman 2006).

Cost performance can be explained as the sum or amount of resource that promotes completion of a project i.e. the overall cost of the project from initials to the end. Quality performance in construction is basically the ability to conform to products and purchases agreed to by all stakeholders. It can further be explained as the satisfaction of project by clients, stakeholders and users. The time performance measure of productivity can also be explained as the duration used in

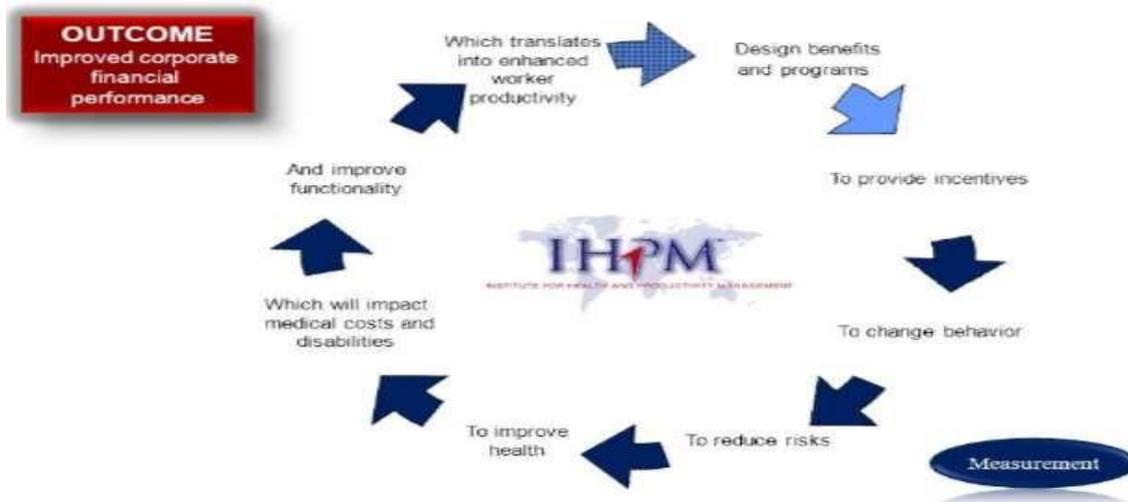
the completion and handling of project to client. This measure is widely used by project managers as a measure of performance in construction and it's attributed to human resource. Human resource attribute to the effectiveness and efficiency of each project and a very important component in construction. However, one of the major problems of the construction and other high risk jobs like the manufacturing industries is that, much focus has been shifted on improving worker productivity as a measure of job performance instead of considering the ergonomic nature of the workstation in which workers/employee operates. Even though changing a workstation into a safer one can increase productivity in every organization; however, it is misleading to conclude that this change results in the improvement of OHS standards. The ergonomic approach such as reduction of workloads, spacious environment, pleasant humanmachine systems, and good working conditions improve the performance of the workers

A lot of industries attribute productivity to labor productivity and it's no different in the construction. In this study, performance/productivity will be measured with labor productivity. Reflecting on the effort of management in improving profit and competition, health and safety measures, standards and implementation is proven to be beneficial. Some of the impact on productivity are direct-benefits such as reduced sick pay and compensation claims and indirect benefits such as reduction of absenteeism and reducing staff agitation.

The Health and Productivity Management (HPM) frame by the Institute of Health and Productivity Management is an "integration of all human resources in an organization and its related departments to accomplish a comprehensive approach towards reduction or elimination of ill health and injury risks while enhancing performance".

Figure 2.1

The HPM Value Chain™



Source: Institute of Health and Productivity Management

2.6 Occupational Health and Safety Practices in Ghana

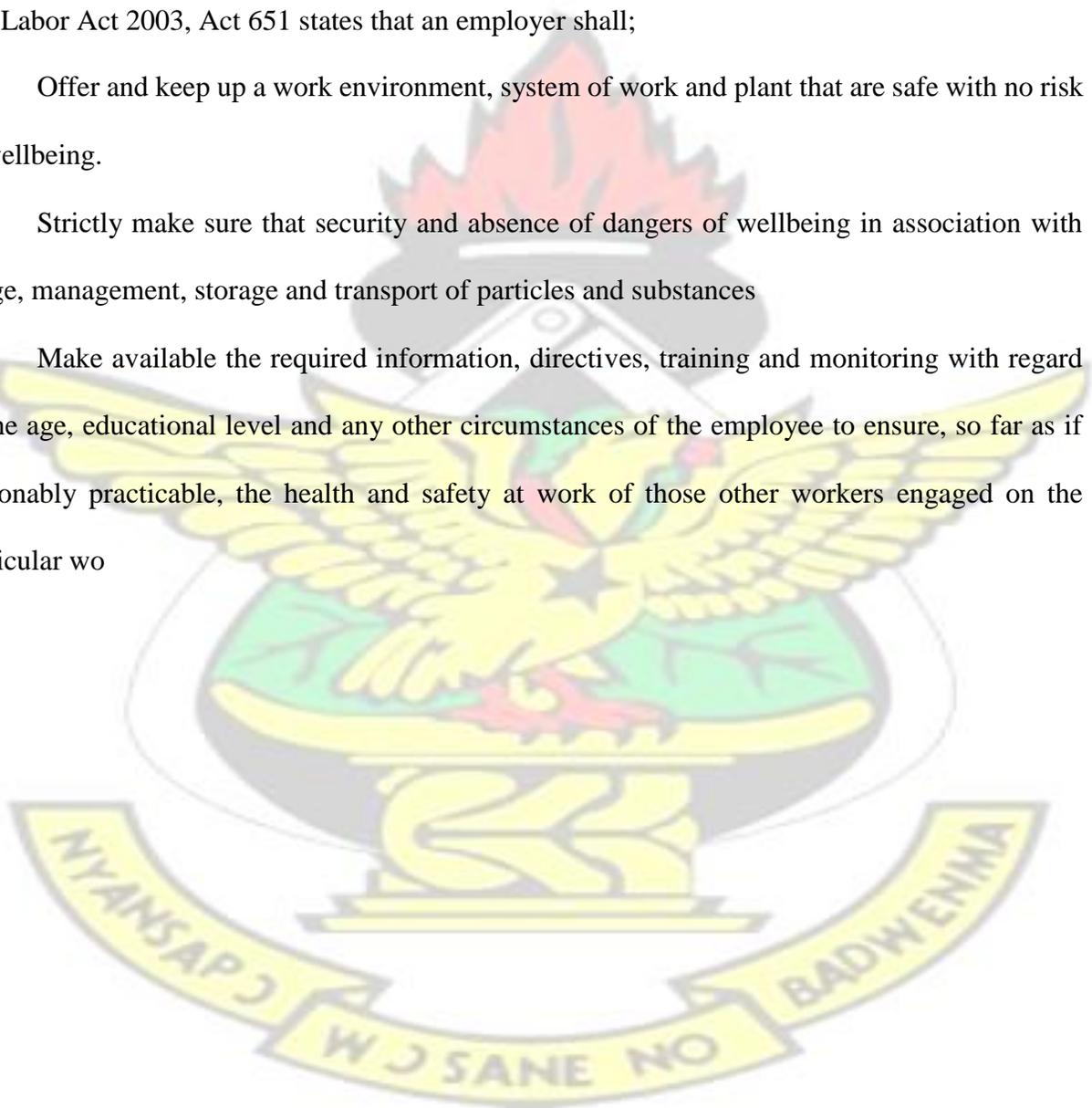
Ghana is amongst the fast-rising country in West Africa embracing industrialization and urbanization. For this reason many workers in these industries like the construction, oil and gas and the mines are without a doubt a high risk environment with which employees are exposed to hazards and risk associated with the occurrence of injuries and accidents. The increase in urbanization and industrialization pose humans to spending more hours at work than home and thus the need for protection of human resource, a vital component for economic growth is the goal with the adherence of safety and health standards in work places.

Every person in Ghana has the right to work in a safe environment according to the 1992 constitution even though, Ghana does not have a national policy on occupational health and safety management, as instituted by ILO convention number 155 (1981).

There are however, the *Factories, Offices and Shops Act 1970, (Act 328)*, the *Mining Regulations 1970 (LI 665)*, and the *Labour Act 2003 (Act 561)*, which captures some regulations about health and safety management. The 2000 annual report by the Labor Department of Ghana gave a total of 8,692 work-related accidents, while in the year 1999, the department reported 4,088 accidents.

The Labor Act 2003, Act 651 states that an employer shall;

- (i) Offer and keep up a work environment, system of work and plant that are safe with no risk to wellbeing.
- (ii) Strictly make sure that security and absence of dangers of wellbeing in association with usage, management, storage and transport of particles and substances
- (iii) Make available the required information, directives, training and monitoring with regard to the age, educational level and any other circumstances of the employee to ensure, so far as if reasonably practicable, the health and safety at work of those other workers engaged on the particular work



CHAPTER THREE

3.0 METHODOLOGY

3.1 Research Methods and Design

The research was carried out to examine the impact of occupational accidents on job Performance in a construction firm using a descriptive cross-sectional study design and a simple random sampling.

3.2 Profile of The Study Area

The study was conducted in a construction firm cited at Kumasi, a metropolitan city in the Ashanti Region of Ghana. The city of Kumasi covers 254 square kilometers and strategically located in south central Ghana.

The firm was established in 2004 and has its headquarters at Kumasi- Anyinam operating as a road and building Construction Company. It is registered under the Ghana's registrar generals department and has been in operation since 2006 with two departments namely the administration staff and the field staff. This grouping was essential because of the nature of work carried out and levels of exposure to occupational accidents are different according to management. An average population of 150 staff which occasionally increase with temporary workers serving unskilled tasks/labor of the construction firm. The construction firm has since its establishment faced numerous completion from both local and multination construction market.

Figure 3.1



3.3 Data Collection Techniques and Data Tools

Quantitative method was used in the study. Two main sources of data were utilized for the research work; primary sources and secondary sources. The methods used in collecting primary data include questionnaire whereas the secondary data was collected from the company's documents in looking at the impact of accidents on job performance (labor productivity) through Pearson correlation.

The quantitative data was analyzed illustratively in line with the study objective. An added section of the questionnaire intend capturing accident occurrences to examine the type and nature of accidents experienced by workers.

3.4 Study Population

The study population was mainly workers of the selected construction firm being it employees and employers in various departments of the firm. The study was carried out at Annason Company limited.

3.5 Study Variables

A correlation analysis was done to examine the relationship between two variables, i.e. the job performance (labor productivity) and the accident. The dependent study variable (outcome variable) of the research was the job performance whereas the independent variable (explanatory variable) is the accidents.

Table 3.1 Variables enumerated in the Questionnaire

Variable	Description
Demographic characteristics	Gathered information on gender, age and occupational group of employees
Knowledge of safety issues	Gathered information on how well the employee knew about issues relating to safety in the hospital environments
Accident occurrence	Information was gathered on injuries/accidents
Workers attitude towards OHS	Information was gathered on workers attitude and compliance of safety practices
Safety management	Assessment of the satisfaction of employee with safety measures.

3.6 Sampling

The target population for the study comprised all the employees in the company which is a total of 150. The sample size for the study is calculated using the Yamane (1967:886) formulae. With 5% margin of error, it means 95% of the expected results of data are certainly true.

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

Where (95% confidence level and $p=0.5$ are assumed);

N = the population size n = the sample size e = the

acceptable sampling error (0.05)

A total of 110 were recruited for as the sample size for the study.

An anticipated non-response percentage of the study is assumed 10%, therefore final sample size

is accounted for us $= \frac{110}{1-10\%} = 122$

Inclusion Criteria:

An individual qualified to be part of the study when he/she has worked with the company for more than 12 months and has consent to being a participant of the study.

Exclusion criteria:

All staff who did not consent to the study and those absent at the time of the study were excluded.

3.7 Pre-testing

The questionnaire for the study was pretested using the population target to test for question variation, interpretation, essentiality, and respondent views and understanding. The pretest

questions included questions abstracted from similar studies. The questions reliability was assessed by comparing answers given by respondent with responses given during data collection.

The comparison of answers check for convergent validity.

3.8 Data Handling

Questionnaires for the research was checked for competencies and accuracy by supervisor. It was administered to workers of the construction firm for the purpose of the study as a mean of exploring primary data for the study. Data collected were coded as means of ensuring uniformity. The coded data was further be stored and utilize in research analysis in the form of sequence and numbers.

3.9 Data Analysis

Data was analyzed using STATA. Correlation analysis was run to determine the relationship between number of accidents and job performance (labor productivity). Scatter diagram was used to check whether a relationship exists between the two variables.

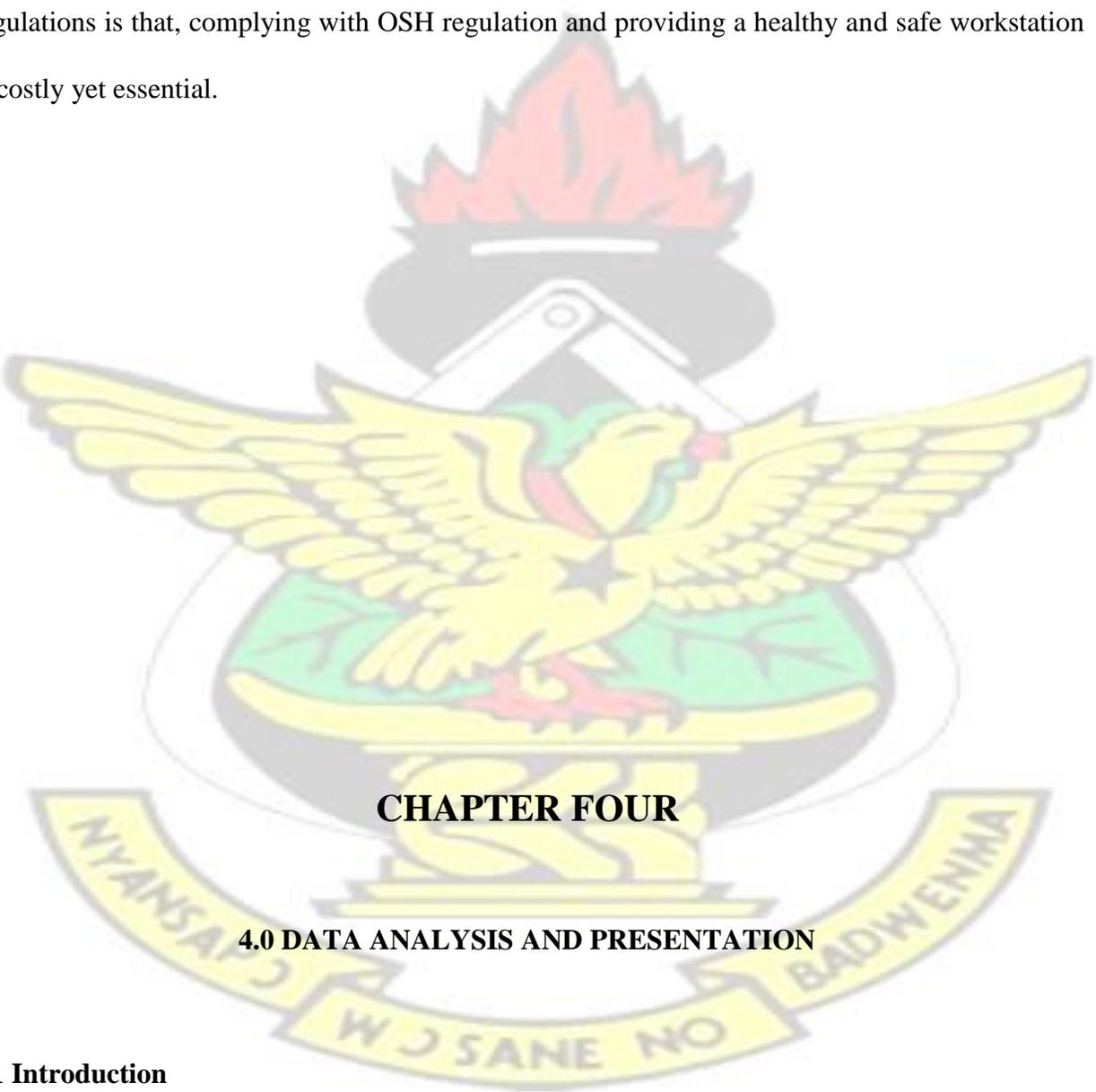
Chi-square (X^2) test was used to test for association between the variables; accident during task and the nature of accident with work attendance at P value <0.05 . Moreover, a reliability test was run to test internal consistency in employee attitude on occupational health and safety practices and safety management systems of the organization. The results was presented in tables and figures and discussed.

3.10 Ethical Consideration

Ethical approval was obtained from the Committee on Human Research Publication and Ethics (CHRPE/AP/542/19) at the College of Health, KNUST. Participation of the study was voluntary and all participants gave consent.

3.11 Limitation of the Study

The research provide insight on the effect of accidents on job performance using a single construction firm as a case study making it unfit for generalization. An important matter that was not further discussed in the study but critical in informing and evaluating decisions on policies and regulations is that, complying with OSH regulation and providing a healthy and safe workstation is costly yet essential.



CHAPTER FOUR

4.0 DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents the findings of both primary and secondary data collected for the study. The primary data was gathered using a structured questionnaire whereas the secondary data was

gathered from documentary evidence. In accordance with the study objective, a total of 110 questionnaires were administered to respondents. A four - point Likert - type scale (SA=strongly agree, A=agree, N=neutral, D=disagree) was used to assess employee attitude among construction workers and safety management systems.

100% response rate was achieved since all sent out questionnaires were collected. The outcome of the primary data (questionnaires) are presented below under various headings followed by the secondary data (documentation);

4.2 Demographic characteristics of respondents

The survey questionnaires were administered to 110 persons. 93 persons representing 84.5% were males whereas 17 persons representing 15.5% were females as shown in table 2. Majority of respondents for the study were within the age range of 20-29 years whereas the least age group respondent were those within 50 years and above. The rest of the respondents within the ages of 30-39 and 40-49 years were 18.2% and 17.5% respectively.

The study recorded a higher number (44) of respondent with a middle form/JHS level of education representing 40.0%. It was preceded by SHS/O'Level/A „level and Primary education representing 28 (25.5 %) and 25 (22.7 %) respectively. However, 6 persons representing 5.5% of the respondents had tertiary education.

In regards to marital status, 66 persons reported married whereas 44 persons are single representing 60% and 40% respectively. Majority of respondents used in the survey has a temporary working status representing 86 (78.2%) whilst 24 (21.8) respondents are permanent workers.

Majority of respondents has worked with the company from within 1-4years representing 88(80%) whereas 1 person has work less than 12 months with the company. The rest of the respondents had work for 5years and above representing 21(19.1%).

Table 4.1: Demographic characteristics of respondents

	Frequency (N=110)	Percentage (%)
Sex		
Male	93	84.5
Female	17	15.5
Age		
20-29years	61	55.5
30-39years	20	18.2
40-49years	19	17.3
50years and above	10	9.1
Educational Level		
Non Formal	7	6.4
Primary	25	22.7
JHS/Middle form	44	40.0
SHS/O'Level/A'level	28	25.5
Tertiary	6	5.5
Marital Status		
Married	66	60.0
Single	44	40.0
Status of Work		
Permanent	24	21.8
Temporal	86	78.2
Working Years		
1-4years	88	80
5years and above	21	19.1
Less than 12months	1	0.1

4.3 Accident Occurrence Survey

Majority of the respondents reported hadn't had an accident whilst executing a task 66 (60%) whereas 44(40%) had an accident in their line of duty. The major kind of accident identified in the study was cut/bruise 24(55%), falling objects 8(18%), slips (16%) and Fall 3 (7%) respectively. 2 (4%) persons did not indicate which kind of accident experienced.

Almost all recoded accidents were minor injuries 36(82%) whereas 3(7%) persons had major Injuries and more than half 30(68%) of the respondents reported that the accident did not affect their attendance.

The frequencies are captured in (Table 4.2) below

Table 4.2

Have you ever had an accident whilst executing a task?	Frequencies	Percentages
Yes	44	40
No	66	60
What kind of accident was it?		
Cut/Bruise	3	7
Fall	8	18
Falling object	7	16
Slip	2	4
Non- response		
What was the nature of accident experienced?		
Minor	36	82
Majority	3	7
Non-response	5	11
Did the accident affect your attendance to work?		
Yes	13	30
NO	30	68
Non-response	1	2

Chi-square analysis was conducted to establish the relationship between workers attendance vis-à-vis involvement of accident and nature of accident. Comparing the relationship between work attendances and engaging in accident, a p value of 0.512 was obtain which is higher than alpha (0.005). This can be concluded that, the association is not statistically significant whereas the comparison of work attendance and nature of accident also gave a statistically significant p value of 0.009.

The chi-square analysis is detailed in table 4.6 and 4.7

Table 4.3 Relationship between involvement in accident and work attendance.

Have you ever had an accident whilst executing a task?	Did it affect your attendance?		Total
	No	Yes	
No	1 2.27%	0 0.00%	1 2.27%
Yes	30 68.18%	13 29.55%	43 97.73%
Total	31 70.45%	13 29.55%	44 100%

df= 1, p=> 0.512

Table 4.4 Relationship between nature of accident and work attendance.

Did it affect your attendance?	What was the nature of accident experienced?		Total
	Major Injuries	Minor Injuries	
No	0 0.00%	27 67.50%	27 67.50%
Yes	3 7.50%	10 25.00%	13 32.50%
Total	3 7.50%	37 92.50%	40 100.00%

df= 1, p= <0.009

4.4 Knowledge on Health and Safety Practices

Majority of respondent 87(79.1) had knowledge on practices of safety as governed by constitution.

Almost all 109 (99.1%) the respondents said labor inspectors visit site and are aware of the

company's policies on safety and information on safety signs 109 (99.1%). Knowledge on health

hazards and the use of personal protective equipment are known by all respondents 110(100%)

Table 4.5 Respondents Knowledge on Health and Safety Practices

	Frequencies	Percentages
Do you know working in a safe environment is a requirement governed by a constitution in Ghana? Yes NO	87 23	79.1 20.9
Does labor inspectors visit workplace in accordance with the labor Act to examine activities on site? Yes Non-response	109 1	99.1 0.9
Are you aware of the regulations and policies regarding workers safety in the firm? Yes Non-response	109 1	99.1 0.9
Do you know the possible health hazards at the construction firm? Yes	110	100
Do you have knowledge on safety signs and their purpose at the construction site? Yes No	109 1	99.1 0.9
Do you have knowledge on the use of Personal Protective equipment? Yes	110	100

4.5 Safety Management Systems

Majority of respondents agreed 103(94%) that the organization has a good monitoring, inspection and evaluation scheme whereas 55(50%) strongly agreed that there are active and efficient safety reps.

59(54%) respondents agreed that suggestions about safety are acted upon by management whilst few persons 6(5%) weren't sure about the outcome of their suggestions. A reliability test was run

on responses where the Cronbach alpha is 0.763 which is close to 1 and indicates high level of consistence.

Table 4.6 Respondents assessment of safety management systems

Item	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Average score
Good monitoring, inspection and evaluation scheme	5(4%)	103(94)	2(2)	–	2.0
Daily monitoring and inspection	49(44)	60(55)	1(1)	–	1.6
Organization policies and guidelines on workers safety	36(32.7)	74(67.3)	–	–	1.7
Active and effective health and safety committee and rep	55(50)	54(49.1)	1(0.9)	–	1.5
Suggestions about safety acted upon by management	45(41)	59(54)	6(5)	–	1.6
Systems are in place to identify, prevent and deal with hazards	49(44)	60(55)	1(1)	–	1.5

Cronbach Alpha = 0.763

4.6 Attitude on Occupational Health and Safety

Majority of respondents agreed 99 (90.9%) to notifying safety team at site on hazards encountered therein never compromising their safety for production was strongly agreed by majority of respondents 59(54.1%). Higher percentage (71%) of the respondent however will not breach OHS for higher production whilst a few will. A reliability test was run on responses where the Cronbach alpha is 0.649 which indicates high level of consistence.

Table 4.7 Respondents attitude towards health and safety practices

Item	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Average score
Notifying safety on hazards	10 (9.1)	99(90.9)	–	–	1.9
Never compromise safety for production	59(54.1)	45(41)	5(5)	–	1.5
Breaching OHS aren't big deal	3(2)	8(7)	21(20)	78(71)	3.5
Wearing PPE as company requirement	51(46)	58(53)	1(1)	–	1.6
Motivated to comply with safety measures	50(45)	57(52)	3(3)	–	1.6
I know channels to report safety issues	56(51)	54(49)	–	–	1.5

Cronbach Alpha = 0.649

4.7 Effect of Occupation Accident on Job Performance

Accidents recorded between (2006-2018) and estimate for production and workers used in the same duration was obtained from the safety manager as a secondary data for the study. The Pearson correlation(r) was used to estimate the impact of accident on labor productivity (performance) with a scatter diagram adopted to reveal the relationship between the two variables.

Table 4.8 Accident records

Year	Number of accidents reported
2006	45
2007	38
2008	49
2009	10
2010	19
2011	87
2012	18
2013	27
2014	34
2015	56
2016	22
2017	14
2018	28

Source: Estimate from safety manager, 5th September, 2019

Table 4.9 Labor Productivity

Year	Labor productivity
2006	772
2007	2857

2008	1937
2009	1937
2010	927
2011	811
2012	2357
2013	2500
2014	3111
2015	2512
2016	1431
2017	1308
2018	1904

Source: Estimate from safety manager, 5th September, 2019

Where labor productivity was estimated as;
$$\text{Labor productivity} = \frac{\text{total output}}{\text{number of workers}}$$

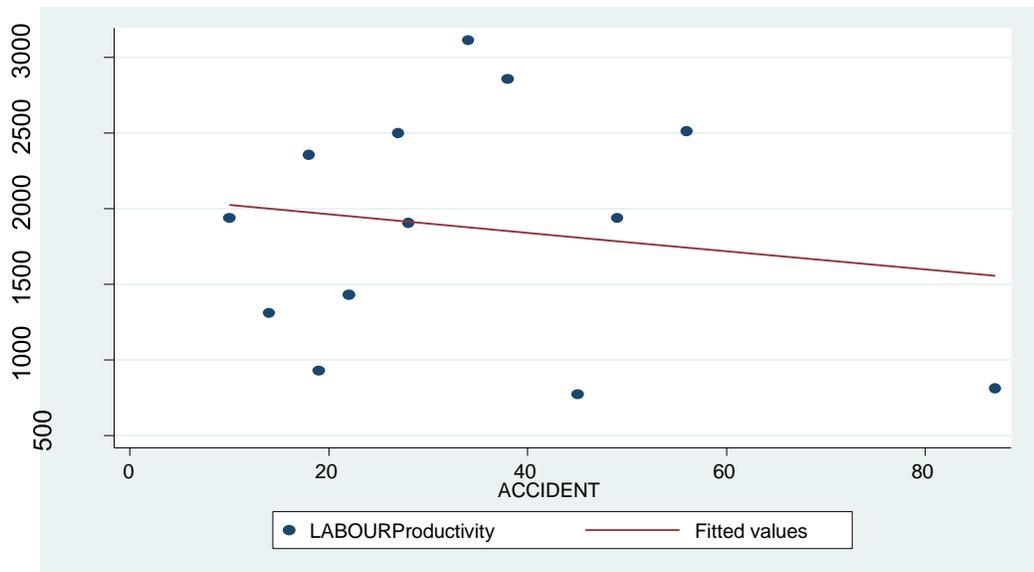
Table 4.10 Pearson correlation of accidents /injuries and job performance in terms of Labor productivity

	Labor productivity	Accidents
Labor productivity	1.0000	
Accidents	-0.164	1.0000

r = -0.164

The Pearson coefficient (r) shows a negative correlation between accident and labor productivity.

Figure 4.1 Scatter diagram showing the relationship between investment in health and safety and job performance (labor productivity).



CHAPTER FIVE

5.0 DISCUSSION OF RESULTS

5.1 Introduction

This study assessed the effect of Occupational Accidents on Job Performance; A case of a construction firm in Kumasi-Ghana. One hundred and ten (110) staff of the firm were recruited for the study. Results showed that;

5.2 Demographic characteristics

Krishna Kakad (2002) has commented that gender division of labor and gender stereotyping surface is a canker in the Construction industry. This seems to be borne out by the gender disparity at the Annason Company limited where 93 respondent, representing 84.5% are males and the rest are females representing 15.2%. Women are hardly ever seen as an integral and necessary part of any construction site, though women workers' participation is on the increase everyday. Males continue to dominate worldwide because activities in construction is projected as tough work requiring physical strength and requiring greater skill.

According to United States Employment and Training Administration (ETA), recruiting youth in construction has been difficult because of their inadequate job skill but in Ghana, it's the reverse as seen in table 4.1 that more than half of the respondents were aged between 20-29years. 50years and above was the least age group of respondent; representing 9.1%.

More so, 60% of the respondents were married while 40% were never married. From table 4.1, fewer number of respondent 7(6.4%) had no formal education. The rest of the respondents are academically inclined to comply and address issues on site which is in line with the study by (Gyekye and Salminen, 2009) on how ones level of education influences their health and safety practices.

In the same table, majority of respondents were working on a temporary status (78.2%) which is in line with Forde *et al.* (2008) study that the use of temporary employees is driven by the ancient idea of meeting short-term or seasonal demand. The Occupational Health and Safety Administration (OSHA) in April 2013 has launched the temporary work initiative in accordance to the increase use of temporary workers in today's world. Almost all the respondents had spent within 1-4 years (80%) with the firm whilst the rest has worked for 5 years and above with the firm (19.1%).

5.3 Association between Accident type and Nature on Absenteeism

The construction industry by its nature is a risky adventure. It is widely known by its high accident rates which is the main disadvantage in the industry. Incidence of accident result in absence from work, loss of productivity, permanent disabilities and even fatalities (Fung *et al.* 2009). In this study however, a higher proportion of respondent haven't had an accident whilst executing a task 66(60%) which maybe as a result of mitigation measures and post investigations to zero accident occurrence by the firm (Hinze & Wilson 2000).

A study based on Australian construction industry by (Dumrak *et al.*, 2013) revealed that, small and medium projects has higher risk than larger projects because construction activities are diverse with changing project supervisors and workers therein exposing employees to major and minor kinds of incidents (Al-Humaidi & Tan 2010). The top three incidents, which cause major and minor accidents in construction according to Singapore statistics are Fall from Height (FFH), Slips, Trips and Falls (STF) and Caught In/Between Objects (CIBO) which is not different from the type and nature of accidents recorded from the study. A higher proportion of incidents recorded were minor injuries 36 (82%) resulting highly from bruise and cut (55%) with slip and fall the least encountered.

Of all the challenges faced by the construction industry, absenteeism has been a major canker. It is one major challenge which the employer suffer and directly affect job productivity.

The widely known cause of absenteeism in construction are injuries/accidents, housing, alcoholism, indebtedness among others (Bhosale and Biswas, 2015). On the contrary, this study found majority of respondent said it did not affect their attendance and a chi-square test showed a statistical not significant test which means there is no relationship between being involved in an accident and the nature of it and attendance.

When a chi-square test was run to determine the association between the nature of accident (Minor/Major injuries) and having had an accident whilst executing a task with work attendance (absenteeism), the study established a statistically significant association between the nature of accident and absenteeism whereas the association between accident and absenteeism was not statistically significant ($\chi^2 = 6.7360$; d.f. = 1; $p < 0.009$) and ($\chi^2 = 0.4291$; d.f. = 1; $p > 0.512$) respectively. The result is in line with studies by Jorgensen (2013) that non-occupational injuries results in higher absence than that of occupational accidents and injuries even though occupational accidents is a contributable factor of the total work absence.

5.4 Respondent's Knowledge on legalities of Occupational Health and Safety practices

According Bust *et al.* (2014), Knowledge is more of information gained because it involves an enlightenment or insight acquired through learning, experience or being familiar with an item. In health and safety, lack of knowledge and skill on the job expose workers to risk of accidents and

injuries. Sunindijo and Zou (2014) is in the view that employees as well as team leaders should be natured with skills and knowledge on safety to enable them sufficiently work safely and to persuade others to do the same.

According to Garnica and Barriga (2018), lack of knowledge result in non-compliance to occupational legislation in workstations. With a higher proportion of respondent (79.1%) knowledgeable in occupational health legalities in the survey, we may reason with Grancia and Barriga (2018) that compliance will not be a challenge for the firm. Respondents were further questioned on labor inspectors visits to the construction sites of which majority (99.1%) of respondents consented to the act.

The level of knowledge of hazards associated with work was high among respondents (100%).

Knowledge on company's policies and regulations (99.1%), safety signs and its purpose on site (99.1%) as well as personal protective equipment (100%) were encouraging. This is comparative to Nosheen and Vikram (2002) study where respondents of the construction industry were aware of the use of personal protective equipment.

On the whole, the higher knowledge on occupational legislation can be attributed to the literacy level of respondent which is in line with (Pulisa and Mogotlane, 2018) study that factor associated with poor knowledge of occupational legislation can be literacy levels.

5.5 Respondents Awareness of Safety Management Systems

Successful implementation of a Safety Management System, according to the Government of Alberta (2012) requires amongst other factors, management commitment to the system and effective allocation of resources. A reliability analysis was carried out on a 6 item scale questions on respondent's awareness of safety management systems. With a Cronbach's alpha of 0.763, it implies the questionnaire has reach an acceptable reliability.

Amidst a higher proportion of respondents agreeing (94%) that the organization has a good monitoring, inspection and evaluation scheme and strongly agreeing to having active and efficient safety reps, the study goes along with Alberta(2012) study. Dawson *et al.* (2011) has argued that, it is management responsibility for reducing accidents and managing the health and safety practices in their business using effectively policies and safety regulation. This is sided by the result of the study which had more than half of the respondents agreed that the organization has policies and guidelines on workers safety.

Moreover, (54%) respondents agreed that suggestions about safety are acted upon by management whilst few persons (5%) weren't sure about the outcome of their suggestions. 55% also agreed that systems were in place to identify, prevent and deal with hazards which implies there are systematic and explicit as well as proactive safety measure in ensuring workers safety (Hsu *et.al.* 2010). The average score indicate that management efforts on health and safety management are concentrated most on good monitoring, inspections and evaluation of workers.

Although safety management systems have been linked to reduction of accidents/injuries and risk minimization based on several studies and organizational view, Gallagher *et al.* (2003) disagree stating that the outcome is ambiguous and invalid.

5.6 Respondent Attitude towards Safety and Health

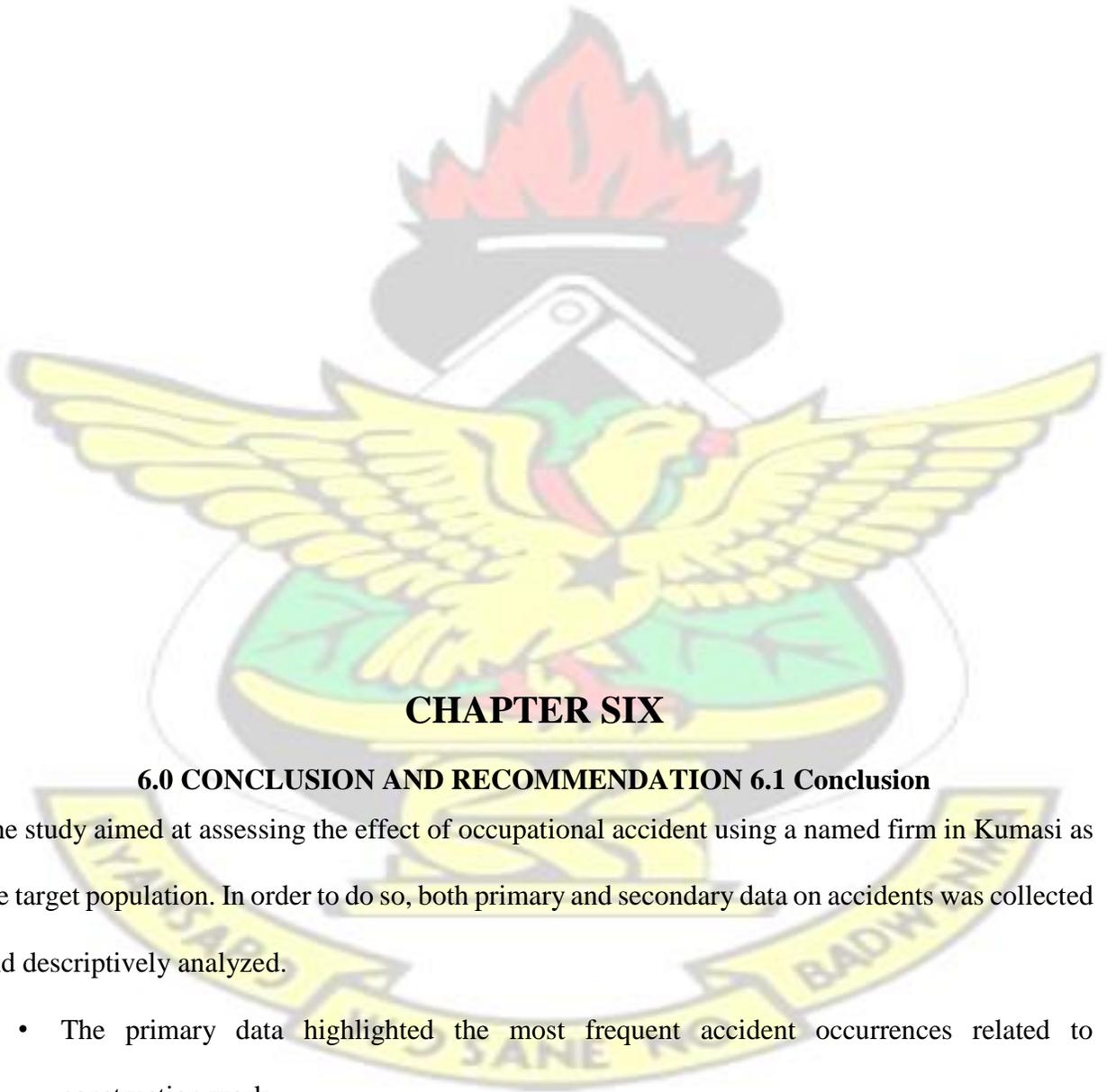
Safety attitude according to Neal & Griffin (2004), is a reflection of one's ability to appreciate and relate with safety policies, procedures, and practices. Smith and Wadsworth (2009) indicate that there is a strong relationship between the safety attitude and safety performance. In the quest to examine workers attitude towards safety, a reliability analysis was carried out using a 7 item scale. Cronbach's alpha 0.649 was derived meaning the questionnaires reliability is acceptable.

Majority (90.1%) of respondent agreed that it is important to notify safety team of hazards and know channels to report safety issues. It was however interesting to know that majority (71%) of respondent “rule for production” disagreed to breaching Occupational safety and strongly agreed (54.1%) to never compromise their safety for productivity. In all there was a positive attitude towards safety at the firm which may suggested that production will be the higher and accidents will be the lesser (Runmado, 2000).

5.7 Effect of accident on Job performance (labor productivity)

Many studies have reported accident having effects on job performance. The Pearson correlation(r) was calculated for accident and job performance (labor productivity) and the hypothesis is tested at $p \leq 0.05$. The result showed the test is not statistically significant (0.5907) with a p value > 0.05 and a weak negative correlation ($r = -0.164$) among the two variables, accident and job performance. Although there are factors lurking in the decrease of productivity, the association with accident records is weak. This could be appreciated in the value of the coefficient of determination ($R^2 = 0.026$) which indicated that only a negligible 2.69% of variability could be accomplished in the relationship. This contradictory relationship has been attributed to the principle of nature which encourage or restricts activities of man in terms of performance depending on how fit man is (Dwomoh, Owusu and Addo, 2013).

KNUST



CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION 6.1 Conclusion

The study aimed at assessing the effect of occupational accident using a named firm in Kumasi as the target population. In order to do so, both primary and secondary data on accidents was collected and descriptively analyzed.

- The primary data highlighted the most frequent accident occurrences related to construction work

- A Pearson correlation co-efficient between accidents and labor productivity showed a negatively weak correlation.
- The nature of accidents associated with working at the construction firm were however, mainly minor injuries (cuts/bruises) which have a relationship with employees attendance to work and this was found to be statistically significant. ($p= 0.009$)
- Majority of the respondent of the survey also had knowledge on occupational health and safety legalities whilst showing positive attitude towards safety practices.
- The study found a good safety management system by the firm which is a major factor in the reduction of absenteeism among workers, reduction of occupational accidents and further increases labor productivity as demonstrated in the conceptual framework.

6.2 Recommendation

Recommendations for employers and consultants in the construction industry.

There is the need for safety management systems to be implemented at the work place. This involves provision of appropriate protective equipment and clothing. There is the need for effective and regular safety training for employees as well.

The consultants should identify risks and hazards that can cause accidents in the construction site such and minimize them during the construction project.

Recommendation for government

A comprehensive legislation of OHS policy should be implemented by government of Ghana as a pillar for construction and other high risk organizations. An established Occupational Health and Safety Administration (OHSA) department mandatory for inducing punishment for safety violators.

Recommendations for further studies

Further studies should be carried out, considering several variables affecting job performance as well as the influence on the occupational health and safety practices. Similar research studies targeting a higher sample population should be used to establish whether findings can be generalized. These studies could employ data collection tools such as interviews and focus group discussions to yield more in-depth information on the subject.

REFERENCES

A. Hamid, A. Rahim, and A. Majid, "Causes of Accidents at Construction Sites," *Malaysian J.*

Civ. vol. 20, no. 2, pp. 242–259, 2008.

Adebola, J. O. (2014) „Knowledge , Attitude and Compliance with Occupational Health and Safety

Practices among Pipeline Products and Marketing Company (PPMC) Staff in Lagos“, 2(8),

pp. 158–173.

- Akyuz, E. and Celik, M. (2014) „Utilization of cognitive map in modelling human error in marine accident analysis and prevention“, *SAFETY SCIENCE*. Elsevier Ltd, 70, pp. 19–28. doi: 10.1016/j.ssci.2014.05.004.
- Alhajeri, M. H. (2014) „Health and safety in the construction industry : challenges and solutions in the UAE“.
- Arachchige, A. W. and Ranasinghe, M. (2015) „STUDY ON THE IMPACT OF ACCIDENTS ON CONSTRUCTION“.
- Arunkumar, K. and Gunasekaran, J. M. E. (2018) „Causes and Effects of Accidents on Construction Site“, 8(6), pp. 18102–18110.
- Bhosale, C. D. and Biswas, A. P. (2015) „Absenteeism in Construction Industry : Causes, Correlation and Remedies“, *International Journal of Advanced Engineering Research and Technology*, 3(6), pp. 215–218.
- Bowen, P., Cattell, K., Distiller, G. and Edwards, P.J. (2008), Job satisfaction of South African quantity surveyors: an empirical study. *Construction Management and Economics*, 26, pp. 765-780.
- Cooney, J. P. and Cooney, J. P. (2016) „THE SCHOOL OF THE BUILT ENVIRONMENT Health and Safety in the Construction Industry : A Review of Procurement, Monitoring, Cost Effectiveness and Strategy.
- Dumrak, J. *et al.* (2013) „Factors associated with the severity of construction accidents: The case of South Australia“, *Australasian Journal of Construction Economics and Building*, 13(4), pp. 32–49. doi: 10.5130/ajceb.v13i4.3620.

- Dwomoh, G., Owusu, E. E. and Addo, M. (2013) „Impact of occupational health and safety policies on employees “ performance in the Ghana “ s timber industry : Evidence from Lumber and Logs Limited“, 1(12), pp. 1–14.
- Forde, C., MacKenzie, R. and Robinson, A. (2008) „Help wanted? Employers“ use of temporary agencies in the UK construction industry“, *Employee Relations*, 30(6), pp. 679–698. doi: 10.1108/01425450810910055.
- Goodman, P. S. and Atkin, R. S. (1984) „Effects of Absenteeism on Individuals and Organizations“, *Absenteeism*, pp. 276–321.
- Granson A.G (2014) „assessing the effectiveness of health and safety practices at AngloGold Ashanti Company Limited,Obuasi mine“.
- Gulhan, B., Ilhan, M. N. and Civil, E. F. (2012) „Original Article Occupational accidents and affecting factors of metal industry in a factory in Ankara, 10(July 2011).
- Gyekye, S. A. and Salminen, S. (2009) „Educational status and organizational safety climate: Does educational attainment influence workers“ perceptions of workplace safety?, *Safety Science*, 47(1), pp. 20–28. doi: 10.1016/j.ssci.2007.12.007.
- Hanna, A.S., Chang, C.-K., Lackney, J.A. and Sullivan, K.T. (2007) Impact of overmanning on mechanical and sheet metal labor productivity. *Journal of Construction Engineering and Management*
- Hinze, J. & Wilson, G. 2000, „Moving towards a zero injury objective“, *Journal of Construction Engineering and Management*, 126 (5), 399-03

- Hopkins, B. (2014), "Explaining variations in absence rates: temporary and agency workers in the food manufacturing sector", *Human Resource Management Journal*, Vol. 24
- Hsu, Y.L., Li, W.C., Chen, K.W., 2010. Structuring critical success factors of airline safety management system using hybrid model.
- Idoro, G. I. (2008) „Health and safety management efforts as correlates of performance in the Nigerian construction industry“, *Journal of Civil Engineering and Management*, 14(4), pp. 277–285. doi: 10.3846/1392-3730.2008.14.27.
- International Labour Organization (2015) „Global Trends on Occupational Accidents and Diseases“, *World Day for Safety and Health At Work*, (April), pp. 1–7. Available at: http://www.ilo.org/legacy/english/osh/en/story_content/external_files/fs_st_1ILO_5_en.pdf.
- Ismail, Z., Doostdar, S. and Harun, Z. (2012) „Factors influencing the implementation of a safety management system for construction sites“, *Safety Science*. Elsevier Ltd, 50(3), pp. 418– 423. doi: 10.1016/j.ssci.2011.10.001.
- J. Dumrak, S. Mostafa, I. Kamardeen, and R. Rameezdeen, "Factors associated with the severity of construction accidents: The case of South Australia," *Australas. J. Constr. Econ. Build.*
- K. Bhutto, A. Griffith and P. Stephenson, "Evaluation of quality, health and safety and environmental management systems and their implementation in contracting organizations,"
- Liao, C. *et al.* (2014) „Work values, work attitude and job performance of green energy industry employees in Taiwan“, (August). doi: 10.5897/AJBM11.1449.
- Lim, A. (2012). OHS management system: Three benefits for construction enterprise. [http://www.artipot.com/article-tags/ohs-management system](http://www.artipot.com/article-tags/ohs-management-system).

Meswani HR. Safety and occupational Health: challenges and opportunities in emerging economies. *Indian J Occup Environ Med* 2008;3-9

Mohamed, A. F. (2011) „IMPROVING SAFETY PERFORMANCE IN CONSTRUCTION“.

Mohammad I. F. Ghasemi, O. Kalatpour, and A. Moghimbeigi, *Applied Ergonomics*, vol. 58, pp. 35-47, 2017/01/01/ (2017).

Mostafa, Z.A.A (2003) “study of the measurement of labor productivity in the Palestinian construction industry: the Gaza strip” Islamic university of Gaza- Palestine.

Muiruri, G. and Mulinge, C. (2014) „Health and Safety Management on Construction Projects Sites in Kenya A Case Study of Construction Projects in Nairobi County, (June 2014), pp. 1–14.

Nosheen N, Vikram M (2002). Knowledge, attitude and practices of healthcare workers regarding needle stick.

Okoye, P. *et al.* (2016) „Building Construction Workers“ Health and Safety Knowledge and Compliance on Site Survey of housing conditions and improvement strategies in Okpoko peri-urban settlement of View project“, *Journal of Safety Engineering*, 2016(1), pp. 17–26.
doi: 10.5923/j.safety.20160501.03.

Puplampu, B. B. and Quartey, H. S. (2012) „Key Issues on Occupational Health and Safety Practices in Ghana : A Review“, 3(19), pp. 151–156.

P. Bust, A. Finneran, R. Hartley and A. Gibb, "Health and safety knowledge in complex networked organisations: Training the chain," Proc. CIB W099 Achieving Sustainable Construction Health and Safety, Lund, Sweden, pp.50-61, 2-3 June, 2014.

Pidgeon, N. F. (2011). Safety attitude and risk management in organizations. *Journal of Crosscultural Psychology* 1991; 22: 129–140.

Pollitt, D. (2011). Corus forges new approach to safety and health. *Human resource management international digest*. Vol.19 No.1 pp.7-9.

Proceedings of the International Construction Research Conference of the Royal Institute of Chartered Surveyors (COBRA), Leeds Metropolitan University Leeds, 2004.

R.Y. Sunindijo and P.X.W. Zou, "An integrated framework for strategic safety management in construction and engineering," Proc. CIB W099 Achieving Sustainable Construction Health and Safety, Lund, Sweden, pp.63-742-3 June, 2014.

Shikdar, A. A., & Sawaqed, N. M. (2003). Worker productivity, and occupational health and safety issues in selected industries. *Computers & Industrial Engineering*, 45, 563-572.
[http://dx.doi.org/10.1016/S0360-8352\(03\)00074-3](http://dx.doi.org/10.1016/S0360-8352(03)00074-3)

Strutt, J.E., Sharp, J.V., Terry, E., Miles, R., 2006. Capability maturity models for offshore organisational management. *Environ. Int.*

Takala J (2011). Introductory Report: Decent and Safe Work. Offshore industry warned over not good enough safety statistics. <http://www.hse.gov.uk/offshore/statistics/hsr1011.pdf>

W. C. Wang, J. J. Liu, and S. C. Chou, "Simulation-based safety evaluation model integrated with network schedule," May 2006.

Widaningsih, L., Susanti, I. and Chandra, T. (2018) „The Attitude of Construction Workers toward the Implementation of Occupational Health and Safety (OHS)“. doi: 10.1088/1757899X/306/1/012075.

Zhou, Q., Fang, D., and Wang, X. (2008). “A method to identify strategies for the improvement of human safety behavior by considering safety climate and personal experience.” *Safety Science*, 46, 1406-1419.





Our Ref: CHRPE/AP/542/19

4th September, 2019.

Miss Agyemang-Bensiko Afa
Department of Occupational
and Environmental Health
School of Public Health
KNUST-KUMASI

Dear Madam,

LETTER OF APPROVAL

Protocol Title: *"Effect of Occupational Accident on Job Performance:
A Case of a Construction Firm in Kumasi, Ghana."*

Proposed Site: *ANNASON Company Limited, Kumasi.*

Sponsor: *Principal Investigator.*

Your submission to the Committee on Human Research, Publications and Ethics on the above-named protocol refers.

The Committee reviewed the following documents:

- A notification letter of 8th August, 2019 from the ANNASON Company Limited (study site) indicating approval for the conduct of the study at the Company.
- A Completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Protocol.
- Questionnaire.

The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, beginning 4th September, 2019 to 3rd September, 2020 renewable thereafter. The Committee may however, suspend or withdraw ethical approval at any time if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at the close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Thank you, Madam, for your application.

Yours faithfully,

Osramfo Prof. Sir J. W. Acheampong MD, FWACP
Chairman

