ASSESSING THE EFFECTIVENESS OF HEALTH AND SAFETY PRACTICES AT ANGLOGOLD ASHANTI COMPANY,OBUASI MINE.

BY

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DECLARATION

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

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ABSTRACT

Despite the fact that human resource management practices have become an important mechanism for improving work place safety measures, little has been done in this area particularly in the Ghanaian mining industry. This research work therefore found it necessary to assess effectiveness of health and safety practices in an organization, using AngloGold Ashanti Company Ltd. The researcher adopted both stratified and simple random sampling techniques in collecting quantitative data from respondents who consist of staff in both managerial/supervisory positions and junior staff of AngloGold Ashanti. Data was collected through observation, interviews and questionnaires and analysed with the use of statistical package for social science.After assessing the effectiveness of health and safety practices in AngloGold Ashanti Company Ltd, the researcher found that more than 50 percent of the respondents strongly agreed that the company provides a safe place of work for all employees and nearly two thirds agreed that the company ensures that employees are not subjected to any unreasonable risks in the workplace and that the company encourages workers to record near minor injuries at the work place. However, more than 50 percent of the respondents strongly agreed that lack of management commitment, worker's refusal to report minor injuries or near misses and the cost involve in training employees on health and safety in the company are major problems. The study recommends that management of AngloGold Ashanti should not only provide adequate protective clothing, they should put in place a monitoring team tasked to go round to check whether the staff really do put on their protective clothing and materials given.

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DEDICATION

I dedicate this work to my husband, Mr. Hubert Ganson and children.

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CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

Business entities in today's competitive environment are constantly struggling with revolutionary trends in terms of accelerating product and technological changes, global competition, deregulation and demographic changes, and the apparent need to survive by implementing policies and programmes to cope with ever changing work place environment. The issue of safe and conducive work place environment has been given a prominence in recent time (Cole, 2002) because labour experts believe that occupational health and safety measures are pre-requisite for continuance industrial production.

Occupational health and safety is a cross disciplinary area concerned with protecting the safety, health and welfare of people engaged in the work or employment (Whitner, 2001). The goal of all occupational health and safety programmes aim to foster a safe work environment. As a secondary effect, Whitner (2001) contended that it may also protect co-works, employers, customers, suppliers, nearby communities, and other members of the public who are impacted by the work place environment. It may involve interactions among many subject areas, including occupational medicine, occupational (industrial) hygiene, public health, and safety engineering, and chemistry and health physics. Whitner identified safety hazards to include those aspects of the work environment that have the potential of immediate and sometimes violent harm to an employee; for example loss of hearing, eyesight or body parts, arts, sprain, bruises, broken bones, burns and electric shock.

The responsibility of ensuring healthy and safe working environment is ultimately placed on the shoulders of employers of companies. International Labour Organizational (1959), places a responsibility on the part of employers to protect employees from all health hazards that may pose threat to the safety and health.

Section 118 (1) of the Ghana Labour Act of 2003, Act 651 states inter alia 'it is the duty of an employer to ensure that every worker employed by him/her works under satisfactory, safe and healthy conditions'. It is note mentioning that some organizations have placed responsibility for employee health and safety with Chief executive officers. This approach is typical of smaller organizations with threats in this area or with mid-size organisation with few such threats. Large organisations seeing health and safety of their employees do set up safety departments usually under the purview of the human resources management team. For example in the USA, safety director should be appointed for every two thousand (2000) workers. In Ghana, it is mandatory under the labour act of 2003 to appoint safety officers in factories with workforce of one thousand (1,000) or more.

Osuala (2005), indicated that providing safety to the employees at the workplace has a moral dimension as well. Though it is a legal requirement and fetches monetary compensation in case of failure but it can't bring back an individual's life. He further, explained that eliminating the causes of accidents and counselling employees at workplace play a substantial role in saving the operating costs, increasing productivity and ensuring reliability and dependability from the employees.

As noted earlier, safety culture is something all employers and employees are interested in achieving. Khatri (2010) emphasized that while many Austrian employees and employers felt confidents about their organisation's safety culture, the vast majority recognise there is more work to be done.

A 2012 Fourth Quarter Police Reports indicates that statistics on work place injuries show that in every two working days throughout Ghana, someone dies or is injured as a result of industrial accidents or poor safety conditions at workplace. Thousands of employees throughout the world lose their limbs, suffer from temporary or permanent disability or lose

their live due to insufficient arrangements for their health and safety at workplace. This does not only affect workers, but their families also suffer the loss all through their lives.

It is therefore clear that effectiveness of health and safety practices which must be adhere to at all times by management failure will result in catastrophic consequences. Unfortunately, in many cases safety and health standard and are not observed. Inadequate training on acceptance and compliance to safety and health measures also hinders it effectiveness. Infact, safety and health in the organisation have to be every body's concern.

It is well established in the recent human resource management literature that a firm's competitive priorities can be achieved not only by continuous product innovation but also effective management of health and safety standards at workplace. This is because safety and sound work environment provide a conducive atmosphere for labour to work. Interestingly, the operations literature is devoid of any research study, either empirical or analytical, that assesses the effectiveness of health and safety practices in an organization especially in the mining companies in Ghana.

So the thrust of this research work is to assess the effectiveness of health and safety practices in an organization, a case of AngloGold Ashanti Company Ltd, Obuasi Mine. AngloGold Ashanti is selected as a case study organization because as a multinational mining company with many sophisticated and complex machinery, mining and processing of gold, observance of safety and health measures at workplace will go a long way to improve workers' productivity.

1.1 Statement of the problem

To improve health and safety measures at the workplace with the aim of ensuring continuous labour productivity, every business entity needs to put in place pragmatic health and safety practices that will address industrial accidents resulting in injury and death of workers. However, the importance

of this strategic role of health and safety practices in a company, especially in the mining company has generated debates in recent time (Shipton et al, 2005; Robert and Jackson, 2004).

Some researchers have suggested that many companies practice health and safety measure on ad hoc basis resulting in a series industrial accident, maiming and causing the death of hundreds of workers making some work places accident prone areas (Nagy and Cenker, 2002).

As one researcher puts it, there is a missing link between human resources management and health and safety practices of a company (Wright, 2000). Despite the fact that human resources management practices have become an important mechanism for improving work place safety measures, little researches have been done on this area particularly in the Ghanaian mining industry. This research work therefore found it necessary to assess effectiveness of health and safety practices in an organization, a case of AngloGold Ashanti Company Ltd.

1.2. Objective of the study

1.2.1 General objectives

The general objective of the study is to assess the effectiveness of health and safety practices at AngloGold Ashanti Company Ltd.

1.2.2 Specific objectives

The specific objectives of this study include:

i. To assess health and safety practices in AngloGold Ashanti.

ii. To examine the level of compliance of health and safety standards in AngloGold Ashanti.

iii. To evaluate the challenges associated with the promotion of health and safety practices in AngloGold Ashanti Company.

1.3 Research Questions

i. What are the health and safety practices in AngloGold Ashanti?

ii. What are the levels of compliance of health and safety standards in AngloGold Ashanti?

iii. What are the challenges associated with the promotion of health and safety practices in AngloGold Ashanti Company.

1.4 Significance of the Study

The desire to achieve safety and health practices at work places have compelled many companies to adopt effective and efficient health and safety practices that is capable of addressing and minimizing to its lowest ebb industrial accidents that results in injuries and deaths of workers.

This desire should therefore stimulate research interest on effective ways in which efficient health and safety practices promote employees wellbeing. However, contributions to the ongoing debate, on the effectiveness of health and safety practices have attracted only very little attention from these practitioners and academia alike. As noted by researchers (Noel 2010), studies of health and safety practices have been dominated by studies of large companies in developed countries.

The study is meant to provide an insight into how health and safety practices can be improved by business entities (especially in mining sector). This research work will also assist managers and other decision makers to make prudent use of health and safety practices with supreme interest of reducing avoidable industrial accidents and death.

This work therefore adds to our knowledge on the general assessment of health and safety practices in mining companies with particular reference to AngloGold Ashanti Obuasi mine and various inadequacies that hinders on effective management of health and safety at work places.This study is relevant since it assess the effectiveness of health and safety as human resources practices in AngloGold Ashanti Company Ltd, and various interventions and policy that can be employed to better health and safety practices of AngloGold Ashanti, Obuasi mines.

1.5 Brief Methodology

The researcher employed a quantitative method for this research work. A field study was conducted to obtain the relevant data for the study. The target population for the collection of data for the research is the staff in the various departments of the company. The researcher adopted both stratified and simple random sampling techniques in collecting data from respondents who consist of staff in both managerial/supervisory positions and junior staff of AngloGold Ashanti. Data was collected through direct visitation, observation, interviews and questionnaires and analysed with the use of statistical package for social science.

1.6 Scope of the Study

This research aims at taking an extensive look at health and safety practices in mining companies in Ghana with particular emphasis on AngloGold Ashanti, Obuasi Mine as the case study. This research work will assess occupational health and safety practices, identifying various inadequacies in the health and safety measures, evaluate the challenges associated with the promotion of health and safety practices in AngloGold Ashanti. AngloGold Ashanti is taking as a case study because as a multinational mining company, it stands to benefit from efficient and effective health and safety practice that is geared towards improvement in work place environment.

1.7 Limitations of the study

The study is supposed to cover mining companies in Ghana; nevertheless, the researcher will choose Anglo-Gold Ashanti, Obuasi mines as a case study to represent mining companies in Ghana, because of time and financial constraints. Furthermore for geographical reasons, the data coverage of the research will be limited to the AngloGold Ashanti mines. However it is believed above mentioned shortfalls, will not hamper the credibility of information therein contained to any marked degree.

1.8 Organization of the study

The study is organised into five chapters. Chapter One deals with the introduction covering background of the study, statement of the problem, research questions, justification of the study, objectives, methodology, scope, limitations as well as organization of the study. Chapter two provides an overview of existing literature. This chapter provided a review of already existing literature on this topic. Chapter three gives the profile of the selected district to be studied. It also describes the data that form the basis for the research reported in this paper and provides an overview of the methods or the methodology used in the study. Again it will deal with the theoretical framework and the empirical model that underpin the analysis of the data. Chapter four reports the results of the empirical analysis. That is, it deals with the presentation, analysis and discussion of the data collected from the field. Chapter five which is the last chapter look at the summary of the work, findings and conclusions of the research and made recommendations to management of AngloGold Ashanti Company.

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

This chapter reviews the theoretical and empirical literature on health and safety practices in a company. Here, the concept of health and safety as well as the causes of health and safety hazards in mining industry are well elaborated. Additionally, health and safety assessment methods and challenges associated with health and safety are also stated.

2.1. The Concept of Health and Safety

Occupational health safety has been defined in various ways by different scholars. World Health Organisation (WHO) in 1995 defined occupational health to includes the actions for occupational medicine, occupational hygiene, occupational psychology, safety, physiotherapy, ergonomics, rehabilitation, etc. Safety on the other side involves the protection of people from physical injury. The International Occupational Hygiene Association (IOHA) generally defines occupational health and safety (OHS) as the science of anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities and the general environment (ILO, 2009). Therefore, occupational health and safety can be seen to concern the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations (ILO/WHO, 1995).

Hall and Goodale (2007) proposed Health and Safety as 'conditions and factors that affect, or could affect the health and safety of employees or other workers (including temporary, and contract workers), visitors, or any other person in the workplace'. Dorland (2001) asserted 'health' as a state of optimal physical, mental and social well-being. It is not merely the absence of disease and

infirmity. Occupational health and safety as contained in Encyclopaedia (1998) made it clear that 'job safety' as the interrelationship between people and work, material, equipment and machinery, environmental and economic consideration such as productivity. These terms 'health and safety' are considered together in the occupational context. Lucas (2007) is of the view that workplace is a physical location in which work related activities are performed under the control of the organisation.

According to Hughes et al, (2008) health and safety considers the working environment in a company and comprises all factors that impact the safety, health, and well-being of employees. It include environmental hazards, unsafe working conditions or processes,, drug and alcohol abuse, and workplace violence.

For operational purposes this study adopted the definition of a health and safety at workplace to include: the one where employers and employees team up to use a constant improvement process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace. This can be done by considering the following prerequisites: health and safety concerns in the physical work environment; health, safety and well-being concerns in the psychosocial work environment including organisation of work and workplace culture; personal health resources in the workplace; and ways of participating in the community to improve the health of workers, their families and other members of the community.

2.2 Theoretical Foundation of Health and Safety in workplaces

Safety constitutes one of the essential human needs, as postulated by Abraham Maslow in his theory of needs hierarchy. To Kreitner (2007), feeling safe at work is the most important factor in job

satisfaction. To achieve this ends, certain organisation integrate into their policy framework, guaranteeing workers' safe work execution under a climate capable of enhancing the physical, mental, and emotional conditions. Organizational policy of this nature is often categorized under health and safety.

Hall and Goodale (1986) made it clear that the employees' health is the absence of illness or disease resulting from the interaction of employee and the work environment. Generally, health means a state of complete physical, emotional, mental, and social ability of an individual to cope with his environment, and not merely the absence of disease or infirmity (Hippocrate, 1981). Health is the art and science of preventing disease, control of infections and organization of health services (Lucas, 2001).

Safety on the other hand, refers to freedom from the incidence or risk of injury or loss of life (Aswathappa, 2000). He described industrial or employee safety as the protection of workers from the danger of industrial accidents. Lucas (2001) proposed that safety can be referred to as absence of injuries due to the interaction of the employee and the work environment. For the purposes of this study, safety refers to a condition of being safe from undergoing or causing hurt, injuries or loss. Therefore, safety policies may include policies directed at either reducing or complete removal of hazardous conditions capable of causing bodily injuries.

Aswathappa (2004) emphasized that organizational safety policy should specifies the company's safety goals and designates the responsibilities and authority for their achievement. He continued that such policy statement must emphatically declare four fundamental points which include - the safety of employees and the public, safety taking precedence over expediency, every effort made to involve all managers, supervisors and employees in the development and implementation of safety procedures, safety legislation to be complied with. Organizational health and safety in the context of this paper is concerned with the health and safety of workers, which Annah (2004) described as part and parcel of human society and as a basic human right.

According to ILO (2005), organisational health and safety focuses on the development of specific measures and programmes, aimed at protecting employees in the course of performing their duties to maximize productivity and improve the overall organizational performance.

2.3 Causes of Health and Safety Hazards in Mining Industry

Occupational health and safety literature suggests that there are various causes of health and safety hazards that are peculiar in mining industry. These causes were identified by Ochsner and Greenberg (1998).

2.3.1 Physical Hazards

Under this, traumatic injury remains a significant problem and ranges from the trivial to the fatal (DeJoy, 2000). He asserted that common causes of fatal injury include rock fall, fires, explosions, mobile equipment accidents, falls from height entrapment and electrocution. And other less common but recognized causes of fatal injury include flooding of underground workings, wet-fill release from collapsed bulkheads and air blast from block carving failure. According to Nachimas and Nachimas (2009), the systematic application of risk management techniques has contributed to a substantial decline in injury frequency rates in developed nations as against poor countries where accidents are frequents.

They were of the view that further improvement, however, is required to reach rates acceptable to the wider community. A review work done by Osuala (2003), on measures to control physical hazards covers system safety and risk management in mining. Noise is almost pervasive in mining. It is produced through drilling, blasting, cutting, materials handling, ventilation, crushing, conveying and ore processing. Measures to control noise have proven extremely difficult in mining and noise-induced hearing loss remains common (Nachimas and Nachimas, 2009).

Iwundu, (2000) emphasised that heat and humidity are encountered in tropical areas and in deep underground mines, where the virgin rock temperature and air temperatures increases with depth, due principally to the geothermal gradient and auto-compression of the air column. Fatal heat and its associated factors have been a significant problem in the AngloGold Obuasi mines deep underground gold mines and heat exhaustion remains a contemporary problem in deep underground mining (Nachimas and Nachimas, 2009).

According to Harvey et al (2001) whole body vibration is commonly experienced whilst operating mobile equipment, such as load-haul-dump units, trucks, scrapers and diggers. This can cause or exacerbate pre-existing spinal disorders. A poorly maintained roads and vehicle contribute to the problem. Aryeetey (2004) hand – arm vibration syndrome is also encountered with the use of vibrating tools such as air leg rock drills. Radon dust exposure in underground mining has increased the risk of lung cancer, but is now generally being managed by mine ventilation. Occupations involving substantial outdoor work appeared not to be associated with an increased risk of melanoma.

According to Gottfredson (2004), infra-red exposures in pyro metallurgical processes contribute to heat stress and may induce cataracts. Electromagnetic fields are encountered in electrolytic smelting and refining processes. He further stressed that barometric pressure is elevated in deep underground mines and reduced at high altitude mines in AngloGold Obuasi mines. Increased barometric pressures in deep mines increase air temperatures, increase convective heat exchange and reduce sweat evaporation rates (Gottfredson, 2004).

2.3.2 Chemical Hazards

Chemicals like crystalline silica, has long been a serious hazard in mining, with the risk of silicosis at its worst during dry drilling late in the nineteenth century (Guzzo and Dickson, 2000). Silicosis has been subject to considerable investigation in mining areas (Haddel and Ojikutu, 2005). In developed

nation, axial water – fed rock drills, wet techniques; ventilation, enclosed cabins and respiratory protection have largely controlled silicosis. However, silicosis remains a problem in developing nations and silico-tuberculosis is important in Africa, where the high prevalence of HIV infection among miners increases the risk. Prolonged exposure to crystalline silica can also cause chronic obstructive pulmonary disease (Gilmer and Haller, 2004).

Coal dust has also been a serious hazard in mining, causing coal workers' pneumoconiosis or 'black lung' and chronic obstructive pulmonary diseases (Ingalls, 2001). The risks have now been largely controlled in developed nations by dust suppression, ventilation and respiratory protection (Gilmer and Haller, 2004). Vigilance is, however, required to maintain effective control. Although largely historic in the developed world, the mining and milling of asbestos has caused a legacy of asbestos – related diseases, which continue to occur today.

Again Gilmer and Haller (2004) pointed out that diesel particulate exposures occur in underground mines because of diesel powered mobile equipment, used primarily for drilling and haulage. They emphasised that diesel particulate is probable human carcinogen and several epidemiological studies from other industries suggest there is an excess risk of lung cancer. Measures to control this include the use of low sulphur diesel fuel, engine maintenance and mine ventilation.

Moreover, Hoffman and Stretzer (1996), wrote that arsenic is sometimes a contaminant of metal ores and has been commercially extracted during gold refining with an accompanying risk of lung cancer. Gilmer and Haller (2004) also said exposures to nickel compounds in some nickel refineries have been reported to increase the risk of lung cancer and nasal sinus cancer. However, these risks have declined substantially with improving hygiene in developed nations. Several other metal ores, including lead, cadmium, manganese, platinum and cobalt, posed health hazards.

Haddel and Ojikutu (2005) noted that the risks are usually greatest during metallurgical processing, when air concentrations exceeds those experienced during mining of the ore. Appropriate control

measures are required. Exposures to coal tar pitch volatiles in Soderberg aluminium smelters have been reported to increase the risk of lung cancer and bladder cancer. Occupational asthma has also been a problem in the pot rooms of aluminium smelters and gold refinery (Huselid, 2006). Coal dust and methane gas explosions in underground gold and coal mines remain a serious risk requiring comprehensive monitoring and management. Some underground gold mines also have problem with carbon dioxide and hydrogen sulphide gas.

Furthermore, cyanide is used as a solvent for metals such as copper and gold in hydrometallurgical processes (Hale and Hale, 2005). Exposure to hydrogen cyanide gas can occur during cyanide solution preparation. Skin splashes with cyanide solutions are hazardous, although the risk is minimized by the use of low concentration solutions. Cyanide solutions are usually alkalinized to reduce the risk of hydrogen cyanide gas being evolved on contact with water. Mercury is still used in some gold mining operations, especially in developing nations, to extract gold through the formation of mercury vapour during preparation of amalgam, retorting or smelting. This is a poisonous metal and its exposure to humans extremely dangerous.

2.3.3 Biological Hazards

Hale and Hale (2005) asserted that certain biological diseases are very common in mining areas in developing countries. For example, the risk of tropical diseases such as malaria and *dengue* fever is very substantial at some remote mining locations. A study conducted by Haddel and Ojikutu (2005) revealed that Leptospirosis and ankylostomiasis were common in mines, but eradication of rats and improved sanitation has controlled these hazards effectively in the developed world. To control this, Haddel and Ojikutu suggested that regular microbiological analysis of the water is necessary to detect *Legionella* contamination or high concentrations of other heterotrophic microorganisms.

2.3.4 Ergonomic hazards

Huselid (2006) suggested that although mining has become increasingly mechanized, there is still a substantial amount of manual handling. Cumulative trauma disorders continue to constitute the largest category of occupational disease in mining and often result in prolonged disability. He continued that overhead work is common underground, during ground support and during the suspension of pipes and electrical cables. Huselid (2006) asserted that this is the cause of shoulder disorders among mining workers. Broken ground can also cause ankle and knee injuries among mining workers.

Mining operations are usually done in 24 hours per day, 7 days per week, so therefore shift work is not uncommon to see in mining companies. There has generally been a trend towards 12 hours sifts in recent years. Eninger (2006), noted that fatigue in relation to shiftwork has been subject to considerable investigation in the mining industry. He mentioned that sleep deficiency, which might be expected in hot locations, have been shown to cause impairments of cognitive and motor performance among drivers from other industries.

Measures like remote control of mobile equipment in underground mining, has been introduced to reduce fatal injuries from rock falls. This has required attention to cognitive ergonomic issues, many of which are similar to those found in metallurgical plant control rooms. Proximity safety devices have also been developed (Eninger, 2006).

2.3.5 Psychosocial Hazards

A study conducted by Flippo in (2003) on 'mining and alcoholism' have revealed that drug and alcohol abuse has been a difficult issue to deal with in mining companies, but policies and procedures are now in place in most large mining operations. Debate continues about how to measure psychosocial impairment. Eninger (2006) noted nevertheless, mining operations commonly

require the measurement of urinary drug metabolites and breath or blood alcohol on pre-employment and following accidents.

Most mining companies are located in remote locations. Massive ore-bodies, such as those at Obuasi mines, which have been mined for over 100 years, justify the establishment of a city. However, companies tend to locate in area that do not have establishment of permanent townships. As a result, there has been a trend towards 'drive-in-drive-out' operations, with mine employees separated from their families and communities during work periods.

Expatriate placements are also common in mining and the associated psychosocial hazards have been reviewed recently (Chen and Hayes). Unfortunately, fatal and severe traumatic injuries continue to occur in mining and often have a profound impact on morale. Post-traumatic stress disorders sometimes develop in witness, colleagues and managers.

2.4 Health and Safety Methods

Safety and health can be assessed and studied from different angles. Guldenmund (2010) distinguished three broad strategies in assessing health and safety at workplaces which include the academic (anthropological), analytical (psychological) and the pragmatic. These distinct approaches each entail specific methods and instruments to assess an organisation's health and safety culture.

2.4.1 Analytic Assessment Approach

The analytical strategy is the most popular and predominant approach in health and safety culture assessment, and focuses specifically on organisational safety climate (Hopkins, 2006). To Guldenmund (2010) health and safety climate is assessed/measured by conducting questionnaire

surveys among a group of workers in an organisation. In such surveys, workers are asked to complete a specific, standardised questionnaire, i.e. giving their perception/opinion (or the perception that is shared among the co-workers) on certain health and safety related dimensions. The resulting data of the survey are processed and analysed, providing a snapshot of the present safety climate in an organisation.

Lucas (2001), postulated that these survey questionnaires can be rather simple (one page) or more exhaustive (up to100 and more items), using tick boxes or Likert scales for responses. The simpler it is, the rougher will be the results. On the other hand too, many questions will reduce the response rate significantly. In its guideline, the IAFA recommends around 60-80 items to cover the most important topics.

Safety climate (and underlying safety climate dimensions), is typically assessed using standardised questionnaires with numerical results. This allows comparisons to be made with past results (in order to quantify changes processes or to assess the effects of intervention), and/or with results from other working groups or units. According to Guldenmund (2010), however, this potential for comparison/benchmarking within or between organisations is rather limited.

As already mentioned above, the measured safety climate appears to be a (strong) predictor for safety performance, which makes it a very appealing construct for researchers, managers and occupational health and safety professional (Clake, 2006).

Zohar (1980) developed one of the first safety climate scales. Since then many safety climate scales have been developed, tested and applied worldwide, in a wide range of sectors and occupations. Several research publications have collected, examined and compared existing safety climate questionnaires in order to analysis their underlying definitions, theories, factors (dimensions), their predictive validity, etc. (Davis et al., 2001).

A review by Seo et al. (2004), in which 16 safety climate questionnaires were examined, identify the following five core constructs/dimensions of the safety climate concept:

a) management commitment to health and safety,
b) supervisor health and safety support,
c) co-worker health and safety support,
d) employee participation in health and safety-related decision making and activities and
e) Competence level of employees with regard to health and safety.

2.4.2 Academic Assessment Strategy

The academic strategy focuses more on things from the past, accident statistics, policy statements, etc (Guldenmund, 2010). This contrasts with the analytical strategy that uses questionnaire surveys to focus more on the present situation, attempting to quantify the safety culture/ climate.

This is a descriptive strategy, meaning that seeks to describe and understand safety culture rather than judging it, seeking to promote change and development (Antonsen, 2009). For this purpose, specific data collection methods are based on, or at least ‘‘inspired by’’, anthropological and sociological research. This implies that required data and information are collected through ‘fieldwork in the whole organisation, using techniques such as observations, document analysis and interviews (Antonsen, 2009, Guldenmund, 2010). These techniques are briefly described below.

Observations

Observation functions to generate an overview of typical artefacts of an organisation. Management and workers are typically observed during their normal work to get information on working practices, processes, communication channels, decision making, symbols, etc. Observation can be made discreetly or using participant observation methods.

Documentation analysis

Documentation analysis can reveal artefacts or espoused values in the organisation. Internal documentation can tell much about management processes, decision-making and communication (e.g. quality management system documentation). Documentation which is directed to the public or which is channelled through media such as intranet or further communication channels (e.g. newsletter, self-presentation, organisation's policy statement, business ethics, etc.) often deal with espoused values.

Personal interviews

According to Antonsen (2009), personal interviews with company management, safety experts or workers in sensitive areas are regularly done to learn more about management and safety practice in the company (which can be both artefacts or values) and can provide a deeper insight into complex contexts. As the aim of such interviews, is to get qualitative estimations of experts. Hence, open questions are the most suitable interviewing techniques, but this the makes the interpretation of the results rather difficult.

Open discussions in groups (focus group interviews, focus groups)

Open discussions in groups (focus group interviews, focus groups) can be used to discuss findings and observations, and can help to get a more quality insight into an organisation. They need to be conducted by a specialist as the answers will be highly influenced by group dynamics and the method is still more open than the qualitative interviews.

What all these techniques/instruments have in common is that they should be preferably applied by a person from outside the organisation, who has a rather neutral point of view and who should have the expertise needed in conducting the assessment.

The use of ethnographic research methods in safety is – apart from examples by Guldenmund (2010) – also described by Brooks (2008), in a study of organisation safety culture in a SME (constructions firms). He underlines the fact that such field studies can be very time consuming, which might encourage people to use quicker methods such as safety climate questionnaires. However, the deepest layers of an organisation's culture can only be uncovered and understood by applying a more academic approach.

2.4.3 Pragmatic Assessment Strategy

Apart from the analytical and academic assessment strategy, Guldenmund (2010) also distinguishes the pragmatic strategy. He stressed that in this strategy, the focus is on assessing a company's current state of maturity regarding safety culture, giving it a ranking on a predefined 'cultural maturity ladder' that shows different levels or stages of cultural maturity.

The purpose goes beyond assessing the current situation to a level that define and explore what should be done to develop the organisation's health and safety culture to a higher level of maturity (or at least maintain the current level of maturity). The pragmatic strategy is thus future-oriented and prescriptive (normative) as to descriptive.

Guldenmund (2010) indicated that the most popular example of the pragmatic strategy is the 'Hearts and Minds' Programme, which is used in large parts of the world. This Programme was developed by Shell (originally for the offshore industry), and distinguishes five different stages of cultural maturity (the 'health and safety culture step ladder') which include: pathological, reactive, calculative, proactive, and generative.

One important tool of the 'Hearts and Minds' Toolkit is the 'Understanding health and safety Culture Checklist', which can be used to assess the safety culture development. It is a so-called 'Behaviourally Anchored Rating Scale' (BARS) (Guldenmund (2010). The Checklist needs to be completed by a group or team of workers during a workshop, led by expert. The answers to the

different items/dimensions ultimately indicate the safety culture maturity i.e. one of the five stages of the HSE Culture Step Ladder. The outcomes of such an assessment are then further linked to other tools and strategies that can be used to improve the organisation's health and safety culture.

2.5 Challenges of good Health and Safety Practices in Business

The challenges which may be associated with Health and Safety practices have been classified by Gavin and Matherly (1997) into three main and overlapping aspects; people, process and technology.

The 'people' problems ranged from the risk of employees' emotional or psychological stress, reduction of loyalty to loss of internal expertise and the fact that there is lack of commitment among employees to provide and be brother's keeper to minimised industrial injury. Malhorta (2004) agreed to this by adding that the lack of cooperation; among workers themselves contribute among others to industrial accidents.

The 'process' meanwhile comprises of two classifications; incompatibilities between the authority (government safety department in charge of health and safety in organisations) and the organisation itself, and the inability of organisation to sufficiently implement their decision to comply with health and safety standards. Among others, authorities' in industrial health and safety programmes only implement general health and safety programmes applicable to all industries and companies but do not take into recognizance specific company demand.

At the same time, Mansfield (2001) has found that many companies have embarked on health and safety practices without any formal methodology or guidance. There is lack of pprogressive and innovative human resource management (HRM) philosophies, policies and processes, (including a proactive and collaborative approach) thereby practising health and safety on ad hoc basis.

A work done by Ingalls, (2002) on 'measures on safety performance' identify that there is also a high cost of providing health and safety materials at work places which deters management from fully executing health and safety standards in companies thereby leaving employees at the mercy of unsafe work environment.

Further, DeJoy, et al. (2000) wrote that unqualified safety officers employed to manage the health and safety issues in many companies has been the bane of industrial accidents thereby causing needless industrial injuries and loss of life. There is lack of routine, regular and seasoned training courses on safety management for workers to appreciate the need for occupational health and safety precautions.

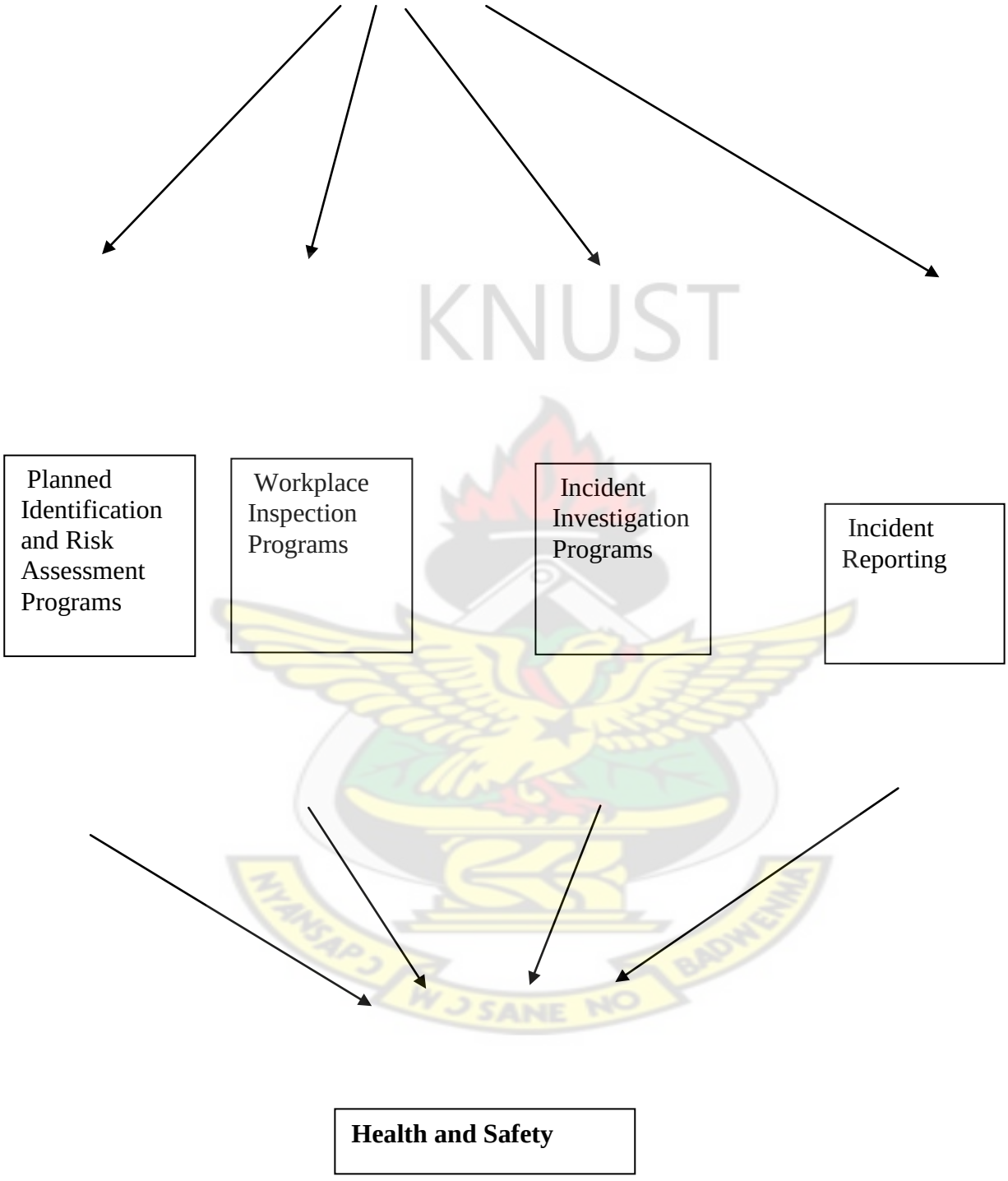
Finally, there is lack of governmental control and monitoring programme to visit business organizations particularly mining companies to unravel whether these companies comply with certain minimum safety standard.

2.6 Conceptual Framework

The conceptual framework below was designed based on the four identified ways developed by Ayodele and Olubayo-Fatiregun (2010) which emphasized that human resources practices influence health and safety through four thematic ways namely: planned identification and risk assessment programs, workplace inspection programs, incident investigation programs and incident reporting.

This is illustrated in fig 2.1 below.

Human Resources Practices



Source: Ayodele and Olubayo-Fatiregun (2010)

2.6.1 Planned Identification and Risk Assessment

Ayodele and Olubayo-Fatiregun (2010) proposed that planned identification and assessment refers to a programmed approach to the identification and assessment of all major hazards and work processes. This should include formal risk assessment activity, and should be a continuous process, with re-assessment upon change in the workplace or the availability of new information on the health and safety hazard, and the conduct of periodic reviews to monitor the effectiveness of controls and to identify any further hazards. The assessment criteria also take into account a range of reactive hazard identification mechanisms,, including workplace inspection, incident investigations, use of injury data and legislation, and employee hazard reports.

Komaki et al., (2008) concluded in a survey that while few companies have a planned approach to hazard identification and assessment, a majority of companies identify health and safety hazard on a more reactive basis, using such methods as record of injury/ illness and incidents; injury/illness/incident investigation; inspections; job hazard analysis; regular analysis of procedures and systems of work; use of legislation, codes of practice and government guidance material; product information, industry or trade guidance; personal knowledge and experience of managers and employees; reporting of hazards by employees; and expert advice and opinion.

2.6.2 Workplace Inspection

To Denisi and Griffin (2005), the audit criteria emphasise the need for regular schedule workplace inspection, organised around an inspection checklist and conducted jointly by trained management and employee representatives, who seek input from employees during the inspection. The records and corrective action tracking systems should be maintained and follow-up inspections undertaken to determine the effectiveness of corrective actions.

Eklof (2008) indicated that periodic review of the inspection process, forms and checklists should be undertaken. Inspections should be viewed as an ongoing part of the safety and health hazard identification, risk assessment and control process, and as a device for verifying the maintenance of

health and safety standards. There should not be an 'inspect in' focus, where inspections are the primary tool for health and safety hazard identification and control, but rather inspection should focused on checking employee compliance with rules and other day-to-day tasks such as housekeeping.

A work done by Rue (2008) revealed that the regular inspection by a supervisor of equipment and availability of protective gear has an 'inspect in' focus, as does the ongoing inspection programs of the two mining and construction firms in South Africa, where the inspection is the primary mechanism for ongoing hazard identification and control, for checking compliance with rules and other day-to-day tasks such as housekeeping.

Osuala (2005), stated that the weekly inspection is supplemented by a monthly inspection undertaken by senior managers external to the mining sites, the building industry equivalent of the more comprehensive inspections conducted on an annual basis in other industries. He continues that the formal annual inspection program complements the informal inspections undertaken separately by the Safety Manager and the health and safety representatives. In other cases, a more comprehensive annual inspection is undertaken through annual health and safety audits.

2.6.3 Incident Investigations

Alberta (2006) wrote that incident investigations systems should be designed to identify reasons for sub-standard performance and underlying failures in the health and safety management and should not support an analysis which considers human error only. He further stated that the enterprises should have a procedure for accident investigations which is administered by persons trained in incident investigation and contemporary approaches to corrective action.

Inspection should be undertaken by manager/supervisors, health and safety representatives and employees affected, with senior managers involved in the investigation of more serious incidents. The investigation reports, discussion of corrective action with appropriate personnel prior to

implementation and monitoring of the effectiveness of corrective action. He finally noted that there should be evidence of review of the investigation system or critiques of particular investigations in order to identify any flaws arising during the investigation process.

Guldenmund, (2010) discovered that less than half the companies he investigated have sought to design an investigation program centred upon the analysis of the underlying management system failures, as opposed to one which supports and focus on human error. Methods used to circumvent a primary focus on human error include the use of quality management analytical tools and guidance on higher order hazard control measures to steer the investigators in the right direction (Brauger, Frank, Korunka and Lueger, 2009), building an emphasis on system failure, as opposed to individual failure, into the workplace culture (Antonsen, 2009) and a vigilant approach by health and safety specialists to treat as incomplete any reports focusing on the individual alone (Gauthey, 2005).

Further, more common method is for investigation forms to contain that the investigator should avoid a hasty attribution of blame to the employee. The use of such forms does not necessarily lead to a more balanced investigation, as shown by the experience of Pigwork (2003) where individuals are invariably viewed as the cause of incidents.

As with workplace inspection especially in most mining companies, an emphasis on the follow-up of the effectiveness of corrective action is rare. Pigwork (2003) pointed out that no cases have a formal system for follow-up in place although there are several examples of tracking systems to ensure that corrective action is undertaken. Gauthey (2005) made it clear that some mining companies in China has health and safety department system approved, but not implemented, to monitor the continuous improvement process that should operate in each plant. He under scored that the system is design to 'close the loop' on investigation and to provide independent advice on effectiveness, with approval granted for a system whereby the Health and Safety Manager and the relevant senior manager will inspect and assess the effectiveness of countermeasures introduced following an investigation.

Gauthey (2005) asserted that at this state, the emphasis should be been placed on the implementation of recommendations for corrective action, with a monthly report by the Health and Safety Manager highlighting outstanding corrective actions related to major incidents. The practice of senior manager perusal of the monthly report is viewed as a stimulant to implement activity.

2.6.4 Incident Reporting

Effective incident reporting is expected to flow from the existence of a reporting procedure that is known by employees and results in a high level of reporting. According to Brauger, Frank, Korunka and Lueger (2009), the reporting system should include incidents that do not result in injury and ensure appropriate reporting to health and safety authorities within the industry. Where relevant, the causes of under-reporting of injuries and incidents should be studied and strategies to encourage reporting implemented.

Guldenmund, (2010) further stated that it is difficult for some enterprises to make an adequate assessment of the level of reporting in the absence of a considered process to identify possible reporting problems and monitor changes following action. The process can be a simple one, as in word of mouth campaign on the importance of reporting for evaluation of the hazard elimination program (Yuh, 2011). This should include an assessment of the implementation of the reporting procedure in its annual inspection.

CHAPTER THREE

METHODOLOGY AND ORGANIZATIONAL PROFILE

3.0 Introduction

This segment describes the methods as well as the procedure adopted for the study. It contains the target population, sources of data, the sampling techniques and the research instruments are outlined. Further, this chapter describes the type of research method used, the data collection procedure and the profile of the company studied.

3.1 Study Design

This research work is quantitative in nature in which descriptive research is used to assess the effectiveness of health and safety practices at AngloGold Ashanti Company Ltd. Ary, Jacobs,

Sorensen and Razavieh (2009) noted that quantitative research seeks to understand a phenomenon by focusing on the total picture rather than breaking it down into variables. Consequently, this research aims at achieving an in-depth understanding of the effectiveness of health and safety practices at AngloGold Ashanti Company Ltd. AngloGold Ashanti Company Ltd provided the necessary data for this study.

Further, Cooper and Schindler (2010) argued that quantitative research includes techniques which seek to describe, decode, translate and otherwise come to terms with the meaning of naturally-occurring situation in the social world. This technique focuses on the quality of data rather than its quantity. A quantitative study method was used in collecting information from respondents who consist of staff in both managerial/supervisory positions and junior staff of AngloGold Ashanti ltd in order to describe and analyse the effectiveness of health and safety practices at AngloGold Ashanti Company Ltd.

In order to successfully meet the objectives of this study, a descriptive study was carried out. Cooper and Schindler (2010), state that a case study is suitable for descriptive research and hence AngloGold Ashanti Company Ltd is used in this study. Kombo and Tromp (2006) noted that a descriptive study is concerned with fact finding which results in the formation of important principles of knowledge and solutions to investigations associated with a study. Therefore, a descriptive study was carried out in the measurements, classification, analysis, comparison and interpretation of the data that would be collected. Data would be collected through the use of structured questionnaires, observation and a document analysis relating to effectiveness of health and safety practices at AngloGold Ashanti Company Ltd, in which first-hand information on the effectiveness of health and safety practices would be collected.

3.2 Study population

The targeted population for the study was AngloGold Ashanti – Obuasi mine. This included the managers and junior staff of the 9 departments.

Table 3.1 Population of AngloGold Ashanti, Obuasi Mines

Category	Number of Persons from all the nine departments
Management staff	100
Senior Staff	850
Junior staff	3150
Total	**4100**

Source: Human resource department (AGA) Obuasi Mines, 2013.

3.3 Sampling method

Sampling is a procedure that a researcher uses to select a number of individuals or objects from a population to be the subject of a study (Kombo and Tromp, 2006). They noted that the

selected group should contain representative characteristics of the entire group. The researcher adopted both stratified and a simple random sampling technique in gathering information from respondents. With regards to stratified sampling method, the researcher grouped the entire company staff from the various departments into two strata (levels) i.e. senior staff (heads of various department) and junior staffs. This grouping was essential because of the nature of work being performed and levels of exposure to risks are different between management and junior staff.

In regard to a simple random sampling method, a sample of the population would be selected so that each member of the population has an equal chance of being selected. The basic concept underlying this method of sampling is that the elements or the individuals in the population are judged to be homogenous.

3.4 Sample size

As said earlier, a simple random sampling method was adopted to select ninety (90) respondents from each of the 9 departments which include: mining department, processing department, mining technical department, engineering department, human resource department, finance department, commercial department, health and safety department and sustainable development department. To get sample size, the researcher, chose 10 respondents from each department. This consists of the head of department, 4 senior staffs and 5 junior staffs from each department. Where a respondent fall short of this criterion, other competent staff who has been in touch with the department's operations for the years specified will be contacted for data through the use of questionnaire.

3.5 Data Collection

Data Collection tells how the data collection procedures and the types of data used for this study are organized. Data was collected through the use of structured questionnaires.

3.5.1 Data type and survey instruments

The study used primary data for discussions and analyses.

3.5.2 Primary data (field survey)

As said earlier, data was collected from respondents taking from all the departments of the company who are involved in the company's day-to-day operation. The questionnaires elicited extensively from those respondents on the practices of health and safety in AngloGold mines. Data was collected by face-to-face based on structured questionnaires. The questionnaires would be evaluated in order to ensure that they are valid for use before administering them.

This research work sought the consent of AngloGold Ashanti Ltd officials through letter of introduction from KNUST Business School. The questionnaires would be administered to the respondents from April to May 2014.

Majority of the questions were pre-coded with multiple choice responses. Other questions were open ended seeking respondents to provide the specific response. The questionnaire is made up of four sections;

i. Personal Data.

ii. Assessing health and safety practices in AngloGold Ashanti.

iii. Examining the level of compliance of health and safety standards in AngloGold Ashanti.

iv. The challenges associated with the promotion of health and safety.

3.6 Research Instrument

The questions contained in the questionnaire are discussed into detail in this section. How the questions were framed and the possible options (answers) available for respondents to choose from are explained in this section. The section also explains how the answers to the questions were used for both the descriptive and qualitative analysis.

3.7 Data Analysis and Interpretation

The data collected from the respondents was sorted and edited for analysis. The questionnaires were organised and classified according to the patterns given by the respondents and the responses from the questionnaires were organised in line with the research questions.

Both descriptive and inferential statistics were used in the analysis of the data. Descriptive statistics included frequencies and their percentages. The analysed data was summarised and findings were reported as a description of the total population of the study. In this descriptive analysis, data retrieved were presented in the form of frequencies, mean, graphs (line graphs and bar chart) and percentages were used to highlight the respondent's perception on the research topic. Data would be recorded with Microsoft Excel and analysed by the use of Statistical Package for Social Sciences (SPSS).

3.8.0 The profile of the case study organisation

AngloGold Ashanti formerly known Ashanti Goldfields Company was established in 1897 by Sir William Edward Maxwell, the then Governor and Commander-in-Chief of the Gold Coast colony.

The company was giving license to mine gold and since those days the company is still mining this venerable ore body in the area of original concession (Pro. Ayensu E.S, 1997). Now the company has merged as a multinational company operating in more than fourteen (14) African countries, two (2) in Ghana, Zimbabwe, Guinea and Tanzania. Currently as a public company, it is listed on the stock exchanges in seven (7) countries, Ghana, United States of America, United Kingdom, Zimbabwe,

Australia, Canada and South Africa. In fact, it is the first African Company to be listed on the New York stock exchange (NYSE).

Since its establishment, the company (AngloGold Ashanti Company Ltd) has faced competition from other established international competitors in the domestic mining markets. Over the years, through a continuous technological advancement coupled with favorable market condition have helped the AngloGold Ashanti to become a more successful mining company in the world.

3.8.1 Vision of the Organisation

The vision of the company is to be the leading mining company across the globe.

3.8.2 Mission of the Organisation

To create value for our shareholders, our employees and our business and social partners through safely and responsibly exploring, mining and marketing our products. Our primary focus is gold and we will pursue value creating opportunities in other minerals where we can leverage our existing assets, skills and experience to enhance the delivery of value.

3.8.3 Corporate activities

Activities provided in the corporate area fall into three categories. First, support is provided to the executive committee in managing AngloGold Ashanti as a whole. Second, certain activities are managed centrally, including strategic and business planning, marketing, corporate finance, treasury, exploration, technology and innovation, corporate secretarial and corporate affairs. Third, certain specialized services are directed from the center although they are managed by operations. These include mining, engineering, metallurgy, mineral resource management, safety and health, the environment and human resources.

AngloGold Ashanti has investments in numerous principal subsidiaries and joint venture interests.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter deals with the analysis and discussion of findings. The analysis was based on data collected from respondents. In effect, a total of 90 questionnaires were administered to

respondents. The researcher collected all the 90 questionnaires sent out to respondents representing 100% response rate.

4.1.0 Demographic and socioeconomic characteristics of respondents

4.1.1 Gender and Age of Respondents

Out of the 90 respondents interviewed, only 12 representing 13.33% were females while as much as 78 respondents representing 86.67% were all males as shown in Table 4.1 This is consistent with the gender distribution of the workforce in AngloGold Ashanti mining company. Data retrieved from human resource section of the company shows that the number of male out number that of females. Males are mostly involved in the core mining business and the fact that male dominate clearly indicate that the responses will reflect the situation on the ground.

Table 4.1 Sex of Respondents

Sex	No. of employees	Percentage
Male	78	86.67
Female	12	13.33
Total	90	100

Source: Author from field survey data, 2014

4.1.2 Educational Level of Respondents

Most of the respondents interviewed were highly educated (literate), as much as 94.87% of the respondents indicated tertiary education. The reason is that these days the company recruit highly educated people into management position because they are responsible in turning the fortune of the company around.

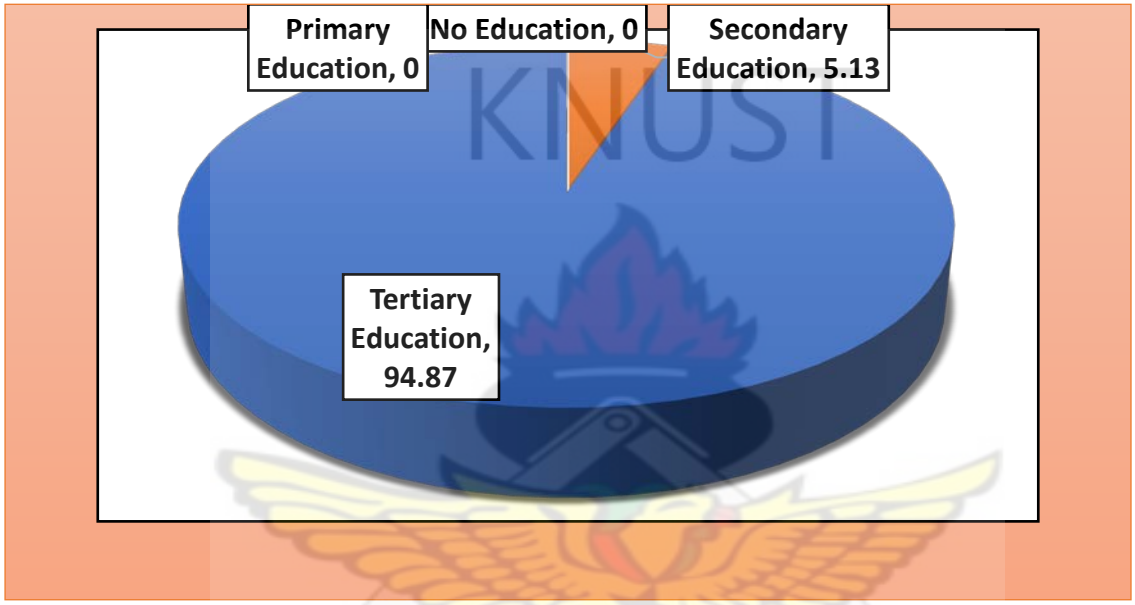


Fig 4.1 Educational Level of Respondents

Source: Author from field survey data, 2014

Those with secondary education constituted 5.13% of the total respondents but there was no record of respondents with primary or no education. With higher educational level of respondents, the researcher believes that the respondents would be able to understand the research topic and give appropriate responses to the questionnaires set. This is indicated in fig 4.1.

4.1.3 Number of years at post

The respondents were asked to indicate the number of years they have been at post and their response are indicated in fig 4.2 below. 12 respondents, representing 13.33 % have been between 0 – 5 years at post, 38 constituting 42.22% have been at post between 6 – 10 years, 22 constituting

42.22% have been at post between 11 – 15 years, 10 constituting 11.11% have been at post between 16 – 20 years and in fact, 8 constituting 8.89% have worked for AngloGold Ashanti company 21 years and above. The minimum and maximum years of respondents captured by the survey were 5.5 years and 37 years respectively with the mean years of 17.35. The average years of respondents at post is a clear indication that the respondents have vast experience in their various departments and could be in the best position to give responses for this research work.

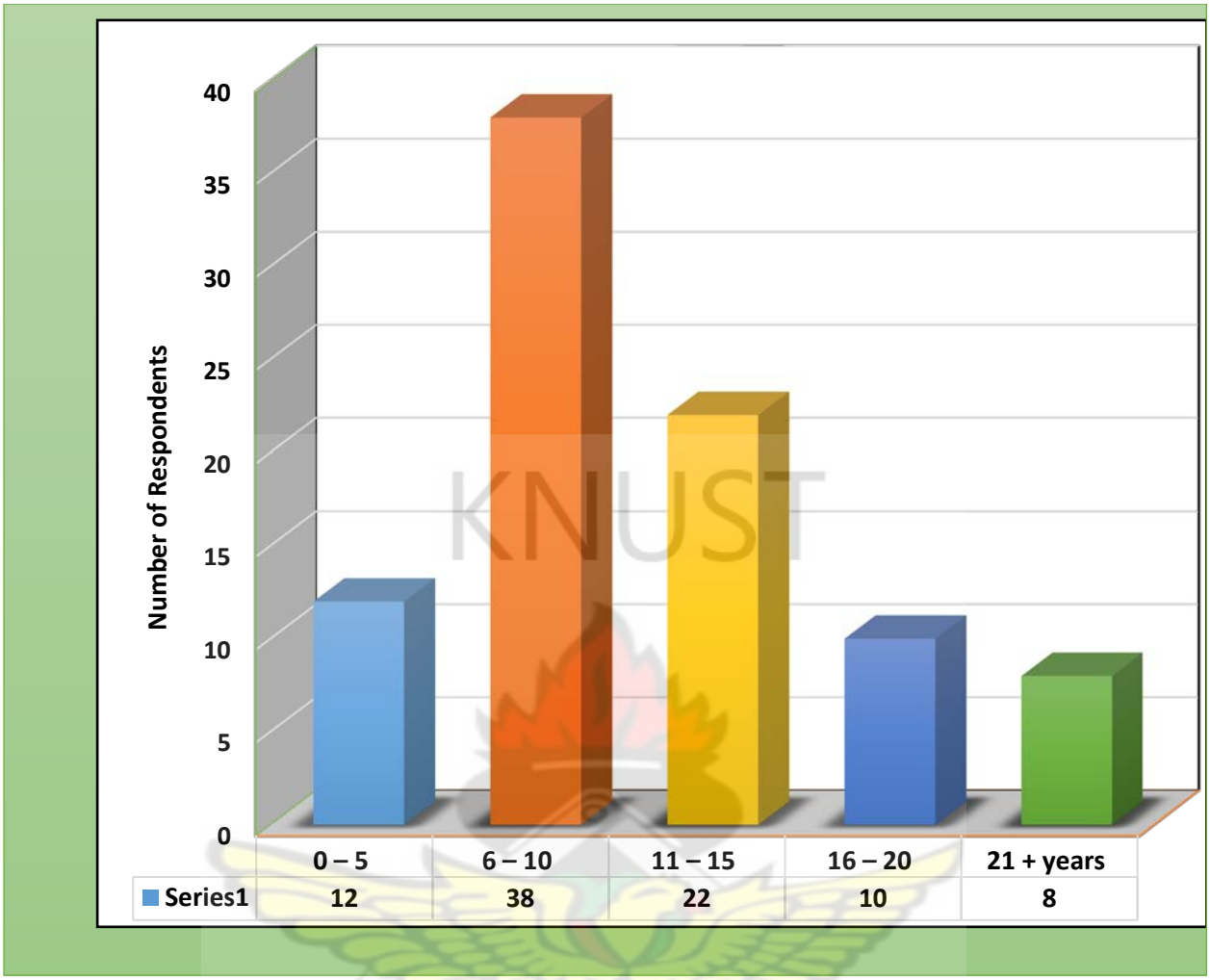


Fig.4.2 Number of years at post

Source: Author from field survey data, 2014

4.2.0 Respondents' views on Health and Safety Practices

Information retrieved from the respondents indicated virtually all of them do understand the concept of Health and Safety practices in AngloGold Ashanti and their views are contained in the table 4.2 below. From table 4.2, 71.11% of the respondents stated that the concept of Health and Safety practices involves a process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace.

Respondents' assertion confirms the views expressed by World Health Organisation (WHO) in 1995 where health and safety involves the various measures put in place to ensure the general wellbeing of workers and the sustainability of the workplace.

From table 4.2, 7.78% of the respondents stated that the concept of Health and Safety practices encompasses a state of complete physical, mental and social wellbeing of workers, 5.56% of the respondents stated that it is a process of achieving health and well-being of workers and the surrounding community, 13.33% of the respondents indicated that Health and Safety practices are made up of process of protecting all members of the workforce against hazardous substances and prevention of workplace accident and 2.22% of the respondents stated others.

Table 4.2. The concept of Health and Safety practices

Categories	**No. of employees**	**Percentage**
A state of complete physical, mental and social wellbeing of workers.	7	7.78
A process of achieving health and well-being of workers and the surrounding community.	5	5.56
A process of protecting all members of the workforce against hazardous substances and prevention of workplace accident.	12	13.33
A process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace.	64	71.11
Others	2	2.22
Total	90	100

Source: Author from field survey data, 2014

4.3 Assessment of the health and safety practices in AngloGold Ashanti

Under this section, respondents were asked to indicate their agreement or disagreement with the job safety in AngloGold Ashanti Company.

4.3.1. The company provides safe place of work.

In response to this aspect, 51.11% of the respondents strongly agreed that the company provides safe place of work for all employees of the company. Other, 23.33% of the respondents agreed that the company provides safe place of work, 16.67% of the respondents disagreed that the company provides safe place of work and only 8.89% of the respondents strongly disagreed that the company provides safe place of work. It can be realized that no respondents indicated neutral as to whether the company provides safe place of work for all employees.

The fact that the respondent agree with the provision of safe place of work attest to the fact that the company adheres to provisions in Factories, Offices and Shop act (Act 328, 1970) where companies are obliged to provide safe place of work to their employees.

Table 4.3 The Company provides a safe place of work

Responses	No. of employees	Percentage
Strongly Agree	46	51.11
Agree	21	23.33
Disagree	15	16.67
Strongly Disagree	8	8.89

Neutral	0	0
Total	90	100

Source: Author from field survey data, 2014

4.3.2. Provision of adequate equipment, materials (personal protective equipment) and clothing to enable employees to carry out their work safely.

In this regard, 52.22% of the respondents disagreed that the company provides adequate equipment, materials (personal protective equipment) and clothing to enable employees to carry out their work safely. 15.56%, 13.33%, 3.33% and 5.56% of the respondents strongly agreed, strongly disagreed and neutral respectively. Most respondents disagreed because they were of the view that most miners are not given adequate personal protective equipment in their works.

This result is in contradiction with section 25 of the Factories, Offices and Shop Act (Act 328, 1970) which enjoins companies to provide adequate equipment, materials (personal protective equipment) and clothing to enable employees to carry out their work safely.

Table 4.4 Provision of adequate equipment, materials (personal protective equipment) and clothing to enable employees to carry out their work safely

Responses	No. of employees	Percentage
Strongly Agree	14	15.56
Agree	21	13.33
Disagree	47	52.22
Strongly Disagree	3	3.33

Neutral	5	5.56
Total	90	100

Source: Author from field survey data, 2014

4.3.3. Wearing protective clothing in the performance of their duties

Again respondents were asked to indicate their agreement or disagreement on whether staffs must put on protective clothing in the performance of their duties. Table 4.5 below gives their responses. From the data collected, while 51.11% of the respondents strongly agreed that staffs must put on protective clothing in the performance of their duties, only 5.56% of the respondents strongly disagreed on this issue. Further, 23.33% of the respondents agreed that staffs must put on protective clothing in the performance of their duties, 16.67% of the respondents disagreed that staff must put on protective clothing in the performance of their duties and 3.33% of the respondents indicated neutral.

Burton (2008) was of the view that industrial accident prevention at work places largely depend on the strict adherence to the use of personal protective equipment like safety hard hats and helmets, gloves, high-visibility clothing, eye protection, safety footwear and safety harnesses.

Table 4.5 Wearing protective clothing in the performance of their duties

Responses	No. of employees	Percentage
Strongly Agree	46	51.11
Agree	21	23.33

Disagree	15	16.67
Strongly Disagree	5	5.56
Neutral	3	3.33
Total	90	100

Source: Author from field survey data, 2014

4.3.4. Company's provision of notices on all health and safety measures.

Moreover, respondents' views were also solicited on whether the company provides notices on all health and safety measures, the responses are presented in Fig 4.3 below. It was that as much as 67.78% (representing 61 of the respondents) agreed that the company provides notices on all health and safety measures appropriately. They stated that information covers all the company's operations ranging from mining (opening pit and underground), crushing, transport, grinding and sizing, leaching and adsorption, elution and electrowining, bullion production, water treatment and tailings disposal. Again, 11.11% of the respondents strongly agreed that the company provides notices on all health and safety measures, 10.00% of the respondents disagreed and 8.89% of the respondents strongly disagreed that the company provides notices on all health and safety measures.

Gibbons (2006) postulated in his study that visible signs and notices must be pasted on all danger sites so as to prevent injuries and death resulting from work place accidents.

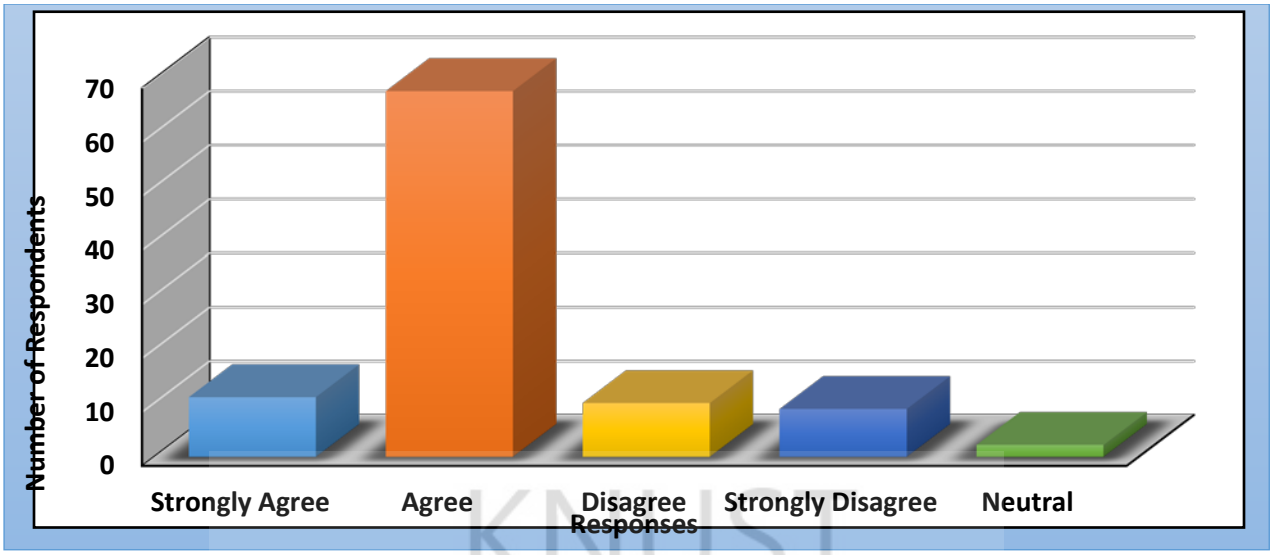


Fig 4.3 The Company provides notices on all health and safety measures.

Source: Author from field survey data, 2014

4.3.5. Co-worker ensures the safety of fellow worker.

In this aspect, 56.67% of the respondents agreed that Co-worker ensures the safety of fellow worker in AngloGold Obuasi mines.

Shain (2009), emphasised that health and safety practices can be effective so long as workers or employers take upon themselves the duty to protect their fellow workers. He describes this as a collaborative effort in health and safety practices in organisation.

Table 4.6 Co-worker ensures the safety of fellow worker.

Responses	No. of employees	Percentage
Strongly Agree	14	15.56
Agree	51	56.67

Disagree	15	16.67
Strongly Disagree	5	5.56
Neutral	6	6.67
Total	90	100

Source: Author from field survey data, 2014

Additionally 15.56% of the respondents strongly agreed that Co-worker ensures the safety of fellow worker, 16.67% of the respondents disagreed that Co-worker ensures the safety of fellow worker and only 5.56% of the respondents strongly disagreed. Most respondents agreed because employees of the company always pursue for a common purpose of ensuring the welfare of their members. It must be noted that 5.56% of the respondents were neutral.

4.3.6. The company provides Safety induction, orientation and refresher courses to employees.

On these issues, it was found that 51.11 (representing 46 of the respondents) agreed that the company provides Safety induction, orientation and refresher courses to employees in the company. This indicates that the company constantly trains its workers on health and safety issues. Further, 25.56% of the respondents strongly agreed, 11.11% of the respondents disagreed, 10.00% of the respondents strongly disagreed and only 2.22% of the respondents were neutral.

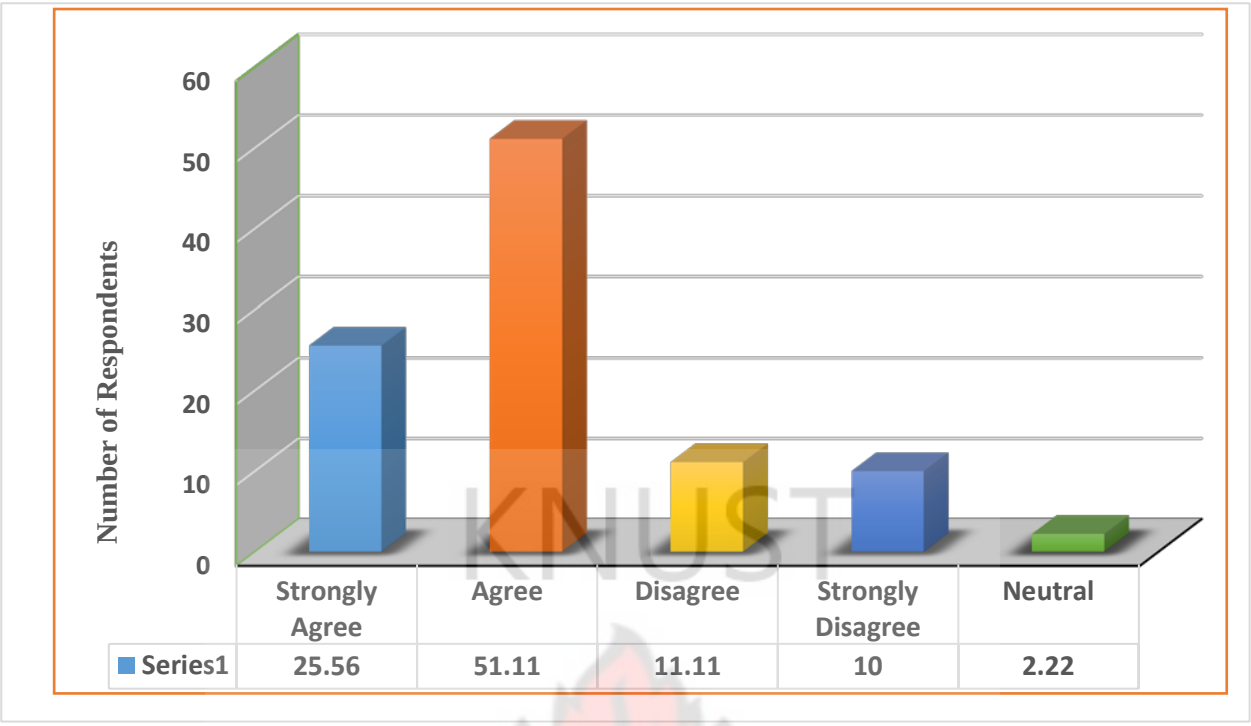


Fig 4.4 Company provides Safety induction, orientation and refresher courses to employees.

Source: Author from field survey data, 2014

Provision of safety induction, orientation and refresher courses to employees support the claim made by Shain (2009) that continued education and training (including induction services, orientation and refresher courses) ensure that all employers become aware of potential health and safety hazards and how they can protect themselves against industrial accidents.

4.3.7. Conducting periodic fire drills at workplace to check for emergency responses and preparedness

On this area, the researcher found that 40.00% (representing 36 of the respondents) agreed that the company conducting periodic fire drills at workplace to check for emergency responses and preparedness. Further, 26.67% of the respondents strongly agreed company conducting periodic fire drills at workplace to check for emergency responses and preparedness, 16.67% of the respondents disagreed and 5.56% of the respondents strongly disagreed for the study. This confirms work done

by Rue (2008) which revealed that the periodic inspection of factory equipment, especially in the mining sector demonstrates the preparedness of the company towards health and safety practices.

Table 4.7 Management conducting periodic fire drills at workplace to check for emergency responses and preparedness

Responses	No. of employees	Percentage
Strongly Agree	24	26.67
Agree	36	40.00
Disagree	15	16.67
Strongly Disagree	5	5.56
Neutral	0	0
Total	**90**	**100**

Source: Author from field survey data, 2014

4.4.0 Compliance to Health and Safety in AngloGold Ashanti according to Labour Act 651 Standards.

4.4.1. The company ensures that employees are not subjected to any unreasonable risks in the workplace.

In this regard, 70.00% of the respondents agreed that the company makes ensure that employees are not subjected to any unreasonable risks in the workplace. Moreover, 22.22% of the respondents strongly agreed and 7.78% of the respondents disagreed. However there were no respondents indicating strongly disagreed and neutral.

The respondents' agreement shows that the company complies with the both the provisions of Ghana labor Act (Act 651) and workmen compensation Act (PNDCL 187) which emphasized that workers are not subjected to any unreasonable risks in the workplace.

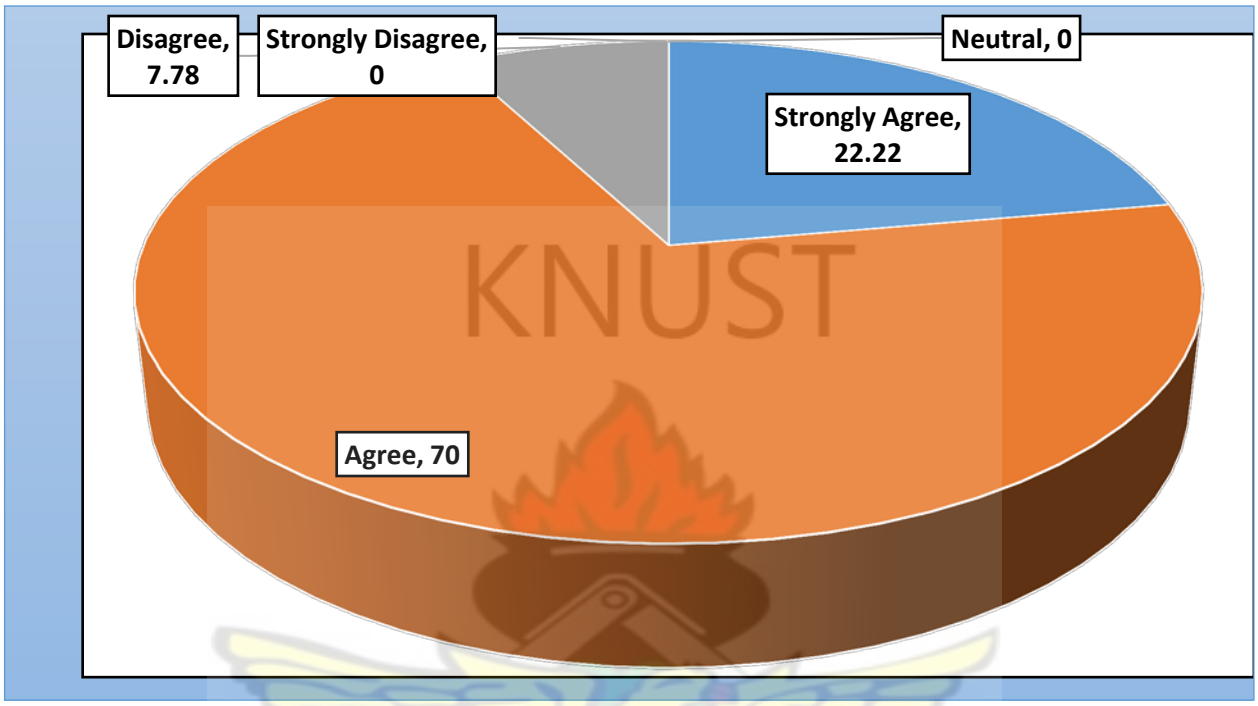


Fig 4.5 The Company ensures that employees are not subjected to any unreasonable risks in the workplace.

Source: Author from field survey data, 2014

4.4.2. The company conducts periodic reviews to assess health and safety standards in the work place.

Again respondents were asked to state the extent of their agreement and disagreement on whether the company conducts periodic reviews to assess health and safety standards, table 4.8 below gives their responses. From the data collected, 58.89% of the respondents agreed that the company conduct periodic reviews to assess health and safety standards in the work place, 14.44% of the respondents strongly agreed that the company conduct periodic reviews to assess health and safety standards, 21.11% of the respondents disagreed that the company conduct periodic reviews to assess health and safety standards and 5.56% of the respondents stated they were not sure.

Table 4.8 The Company conducts periodic reviews to assess health and safety standards in the workplace.

Responses	No. of employees	Percentage
Strongly Agree	13	14.44
Agree	53	58.89
Disagree	19	21.11
Strongly Disagree	5	5.56
Neutral	0	0
Total	90	100

Source: Author from field survey data, 2014

This issue supports Denisi and Griffin (2005) position that periodic reviews of assessing health and safety standards in mining companies helps prevents industrial accidents.

4.4.3. Management's timely response to health and safety concerns

Information received from respondents indicates that Management do response to safety concern raised by workers of the company. The researcher further inquired from respondents how regular management response quickly to safety concern, table 4.9 below gives their responses. From table 4.9, 47.78% of the respondents disagreed that management timely response to health and safety concern, 24.44% of the respondents agreed that management do timely response quickly to health and safety concern, 16.67% of the respondents strongly agreed that management timely response to health and safety concern and only 11.11% of the respondents strongly disagreed. Most respondents

disagreed that Management do regularly response quickly to health and safety concern raised by workers because such concerns have to be addressed through the hierarchy of the administration of the company.

Table 4.9 Managements' timely response to health and safety concerns

Category	Number of employees	Percentage
Strongly Agree	15	16.67
Agree	22	24.44
Disagree	43	47.78
Strongly Disagree	10	11.11
Total	90	100

Source: Author from field survey data, 2014

4.4.4. Trained personnel for incident investigation procedures in the company

On this area, 60.00% of the respondents agreed that the company has well trained personnel for incident investigation procedures, 22.22% of the respondents disagreed, 14.45% of the respondents strongly agreed and only 3.33% of the respondents strongly disagreed that the company has a well trained personnel for incident investigation procedures.

Again, the study agrees with Denisi and Griffin (2005) that incident investigation procedures should be conducted by trained personnel so that the incident will not be aggravated.

Table 4.10 Trained personnel for incident investigation procedures in the company

Category	No. of employees	Percentage

Strongly Agree	13	14.45
Agree	54	60.00
Disagree	20	22.22
Strongly Disagree	3	3.33
Total	90	100

Source: Author from field survey data, 2014

4.4.5. Effective incident reporting procedures

With regard to this issue, respondents were asked to indicate the extent of their agreement on the incident reporting procedure in respondents department, table 4.18 below gives the responses retrieved from the respondents. From table 4.11, it was clear that 73.33% of the respondents agreed that their department has effective incident reporting procedure, 12.22% strongly agreed that their department has effective incident reporting procedure, 11.11% disagreed and only 3.33% strongly disagreed. Effective incident reporting procedure is important in detecting causes of accidents at work places.

The respondents agreement support a recommendation proposed by Korunka and Lueger (2009) that management of factories and companies should institute an effective incident reporting procedures so as to ensure that incidents are well reported to management for redress.

Table 4.11 Effective incident reporting procedures

Category	**No. of employees**	**Percentage**
Strongly Agree	11	12.22

Agree	66	73.33
Disagree	10	11.11
Strongly Disagree	3	3.33
Total	90	100

Source: Author from field survey data, 2014

4.4.6. Management's provision of appropriate remedy for addressing accident occurrence

On the issue of whether management provides the appropriate remedy for addressing accidents occurrence or not, while only 22.22% of the respondents agreed that management provide appropriate remedy for addressing accidents occurrence, as much as 73.33% of the respondents disagreed that management do provide appropriate remedy for addressing accidents occurrence. Most of the respondents indicated disagreed because remedies are not implemented on time.

This result is in agreement with the work of Clake (2006) which indicate effective health and safety practices in companies do not only dwell on putting measures in place to avoid occurrence of accidents but also providing appropriate remedy for addressing occurrence of accidents.

Table 4.12 Management provides appropriate remedy for addressing accidents occurrence

Category	**No. of employees**	**Percentage**
Strongly Agree	4	4.44
Agree	20	22.22
Disagree	66	73.33

Strongly Disagree	0	0.00
Total	90	100

Source: Author from field survey data, 2014

4.5.0 Challenges associated with the promotion of health and safety practices in AngloGold Ashanti Company

4.5.1 The provision of health and safety materials had been a cost burden on the organisation

Under this section, respondents were asked to indicate their agreement or disagreement of the whether provision of health and safety materials had been a cost burden on the organisation and their responses are contained in the fig 6 below. From fig 6, as much as 84.44% of the respondents strongly agreed that the provision of health and safety materials had been a cost burden on the organisation, 21.11% of the respondents agreed, 8.89% of the respondents disagreed and 5.56% of the respondents strongly disagreed that the provision of health and safety materials had been a cost burden on the organisation.

The fact that majority of respondents strongly agreed that the provision of health and safety materials had been a cost burden on the organisation supports a work done by Ingalls, (2002) on 'measures on safety performance' where he identified that there is also a high cost of providing health and safety materials at work places which deters management from fully executing health and safety standards in companies thereby leaving employees at the mercy of unsafe work environment.

Table 4.13 The provision of health and safety materials had been a cost burden on the organisation

Responses	No. of employees	Percentage

Strongly Agree	58	84.44
Agree	19	21.11
Disagree	8	8.89
Strongly Disagree	5	5.56
Neutral	0	0.00
Total	90	100

Source: Author from field survey data, 2014

4.5.2 The huge working population with low literacy rate and abysmal awareness of health and safety is a challenge.

On this issue, 41 (45.56%) of the respondents agreed that the huge working population with low literacy rate and abysmal awareness of health and safety is a challenge.

This agrees with Nachimas and Nachimas (2009) opinion that employees with low literacy and lack of awareness of health and safety practices is a major problem facing mining companies in Africa.

Further, 20 (22.22%) of the respondents strongly agreed that the huge working population with low literacy rate and abysmal awareness of health and safety is a challenge, 16 (17.78%) of the respondents disagreed, 5 (5.56%) of the respondents strongly disagreed. Additionally, 8 (89%) of the respondents are neutral as to whether the huge working population with low literacy rate and abysmal awareness of health and safety is a challenge or not. These are contained in fig 6.

Table 4.14. The huge working population with low literacy rate and abysmal awareness of health and safety is a challenge

Responses	No. of employees	Percentage
Strongly Agree	20	22.22
Agree	41	45.56

Disagree	16	17.78
Strongly Disagree	5	5.56
Neutral	8	8.89
Total	90	100

Source: Author from field survey data, 2014

4.5.3 Lack of clarity about the issues surrounding health and safety in the organization is a problem

In response to this aspect, while as much as 51.11% of the respondents disagreed that lack of clarity about the issues surrounding health and safety in the organization is a problem, 21 (23.33%) of the respondents agreed lack of clarity about the issues surrounding health and safety in the organization is a problem. Moreover, 15 (16.67%) of the respondents strongly agreed that lack of clarity about the issues surrounding health and safety in the organization is a problem and 5 (5.56%) of the respondents strongly disagreed. Additionally, 3 (3.33%) of the respondents were neutral.

This supports DeJoy, et al. (2000) analysis that lack of clarity on health and safety practices in workplaces are problems facing many mining companies in recent times.

Table 4.15 Lack of clarity about the issues surrounding health and safety in the organization is a problem

Responses	No. of employees	Percentage
Strongly Agree	15	16.67
Agree	21	23.33

Disagree	46	51.11
Strongly Disagree	5	5.56
Neutral	3	3.33
Total	90	100

Source: Author from field survey data, 2014

4.5.4 Getting the right personnel to help in promoting health and safety practices in the organization is a challenge.

Respondents were also asked to indicate their agreement or disagreement of the whether getting the right personnel to help in promoting health and safety practices in the organization is a challenge; their responses are contained in fig 6. From the table, 23.33% of the respondents strongly agreed that getting the right personnel to help in promoting health and safety practices in the organization is a challenge, 16.67% of the respondents agreed, 40.00% of the respondents disagreed and 16.69% of the respondents strongly disagreed. Additionally, 3 (3.33%) of the respondents were neutral.

The response from respondents on this issue however goes contrary to DeJoy, et al. (2000) assertion that unqualified safety officers employed to manage the health and safety issues in many companies has been the bane of industrial accidents thereby causing needless industrial injuries and loss of life. This may be due to the fact that AngloGold Ashanti being a profitable company employs qualify health and safety officers.

Table 4.16 Getting the right personnel to help in promoting health and safety practices in the organization is a challenge.

Responses	No. of employees	Percentage

Strongly Agree	21	23.33
Agree	15	16.67
Disagree	36	40.00
Strongly Disagree	15	16.67
Neutral	3	3.33
Total	90	100

Source: Author from field survey data, 2014

4.5.5 Management commitment to health and safety had been a challenge

From the data collected, while 51.11% of the respondents strongly agreed that management commitment to health and safety had been a challenge, only 5.56% of the respondents strongly disagreed on this issue. Further, 23.33% of the respondents agreed that management commitment to health and safety had been a challenge, 16.67% of the respondents disagreed that management commitment to health and safety had been a challenge and 3.33% of the respondents indicated neutral.

Respondents' agreement confirms the opinion held by Mastrangelo et al. (2008) that health and safety practices can only be effective when management are highly committed to it. He however indicated that rampant industrial accidents especially in the mining sectors in South Africa, Zimbabwe and Ghana may be attributed to a large extend managerial negligence.

Table 4.17 Management commitment to health and safety had been a challenge

Responses	No. of employees	Percentage

Strongly Agree	46	51.11
Agree	21	23.33
Disagree	15	16.67
Strongly Disagree	5	5.56
Neutral	3	3.33
Total	90	100

Source: Author from field survey data, 2014

4.5.6. Workers' refusal to report minor injuries or near misses is a challenge

Further, respondents' views were also solicited on whether workers refusal to report minor injuries or near misses is a challenge in AngloGold Ashanti Obuasi mines, the responses are presented in fig 6 below. It was found that as much as 67.78% (representing 61 of the respondents) agreed that the company workers refusal to report minor injuries or near misses is a challenge in the company. Malhorta (2004) agreed to this by adding that the lack of co-operation, among workers themselves contribute among others to industrial accidents.

The respondents were indicated that workers refusal to report minor injuries or near misses as a result of fear of being sacked and this possess as a major obstacle in the promotion of health and safety in the community. Again, 11.11% of the respondents strongly agreed that workers refusal to report minor injuries or near misses is a challenge, 10.00% of the respondents disagreed and 8.89% of the respondents strongly disagreed.

Table 4.18 Workers' refusal to report minor injuries or near misses is a challenge

Responses	No. of employees	Percentage
Strongly Agree	10	11.11
Agree	61	67.78
Disagree	9	10.00
Strongly Disagree	8	8.89
Neutral	2	2.22
Total	90	100

Source: Author from field survey data, 2014

4.5.7. Workers refusal to wear personal protective equipment (PPEs) in the organization is a challenge.

In this aspect, 56.67% of the respondents agreed that workers refusal to wear personal protective equipment (PPES) in the organization is a challenge in AngloGold Obuasi mines.

Additionally 15.56% of the respondents strongly agreed that workers refusal to wear personal protective equipment (PPES) in the organization is a challenge, 16.67% of the respondents disagreed and only 5.56% of the respondents strongly disagreed. It must be noted that 5.56% of the respondents were neutral.

Burton (2008) also agrees to this issue that industrial accident prevention at work places largely depend on the strict adherence to the use of personal protective equipment like safety hard hats and helmets, gloves, high-visibility clothing, eye protection, safety footwear and safety harnesses. He indicate that many workers refuse to wear the protective equipment and this is posing a challenge to mining companies as workers often get involves in industrial accidents.

Table 4.19 Workers' refusal to wear personal protective equipment (PPEs) in the organization is a challenge.

Responses	No. of employees	Percentage
Strongly Agree	14	15.56
Agree	51	56.67
Disagree	15	16.67
Strongly Disagree	5	5.56
Neutral	6	6.67
Total	90	100

Source: Author from field survey data, 2014

4.5.8 Cost involved in training employees on health and safety in the organisation is a challenge.

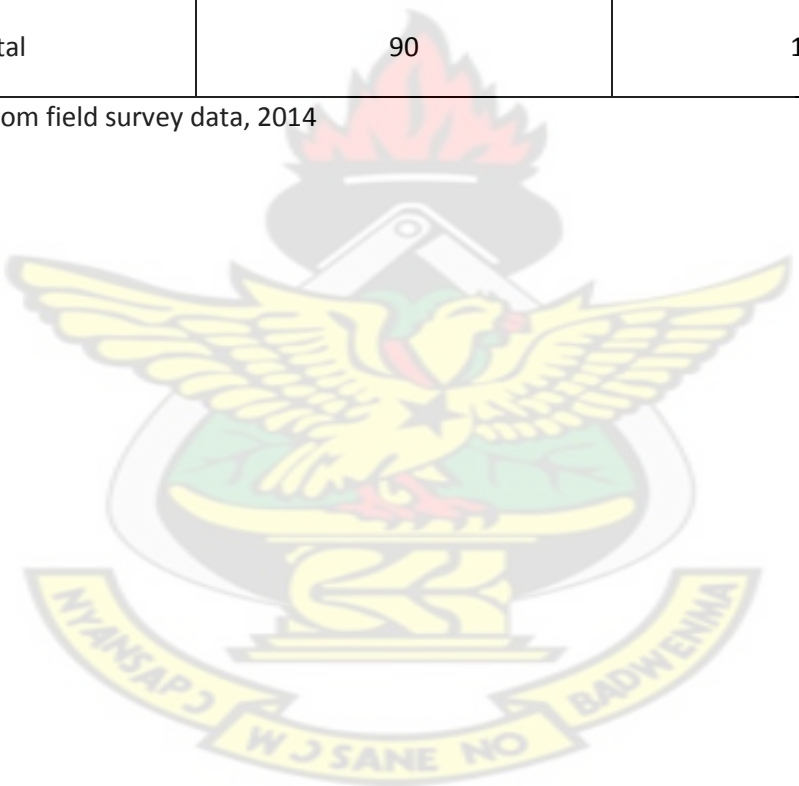
Under this section, as much as 84.44% of the respondents agreed that the cost involves in training employees on health and safety in the organisation is a challenge, 21.11% of the respondents strongly agreed, 8.89% of the respondents disagreed and 5.56% of the respondents strongly disagreed that the cost involves in training employees on health and safety in the organisation is a challenge. Here, most of the respondents emphasized that cost associated with in training employees on health and safety practices are higher and sometimes prevents the organisation from occasionally undertaking this exercise.

This supports the view held by Mastrangelo et al. (2008) that costs involve in training employees on health and safety pose the biggest challenge employers in the mining companies.

Table 4.20 Cost involved in training employees on health and safety in the organisation is a challenge.

Responses	No. of employees	Percentage
Strongly Agree	19	21.11
Agree	58	84.44
Disagree	8	8.89
Strongly Disagree	5	5.56
Neutral	0	0.00
Total	90	100

Source: Author from field survey data, 2014



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0. Introduction

In this chapter, the summary of findings and conclusions which are derived from the analysis are formally documented here. Again, the conclusions are made against the findings of this study. Finally policy recommendations are also made in this chapter.

5.1.0 Summary of Findings

5.1.1 Respondents' views on Health and Safety Practices

Information retrieved from the respondents indicated virtually all of them do understand the concept of Health and Safety practices in AngloGold Ashanti as majority expressed their view as the practices involves a process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace. Respondents' indication confirms the views expressed by World Health Organisation (WHO) in 1995 where health and safety involves the various measures put in place to ensure the general wellbeing of workers and the sustainability of the workplace.

5.1.2 Assessment of health and safety practices in AngloGold Ashanti

The study reveals that 51.11% of the respondents strongly agreed that the company provides safe place of work for all employees of the company, 52.22% of the respondents disagreed that the company provides adequate equipment, materials (personal protective equipment) and clothing to enable employees to carry out their work safely and 51.11% of the respondents strongly agreed that staffs must put on protective clothing in the performance of their duties.

Moreover, 67.78% agreed that the company provides notices on all health and safety measures, 56.67% of the respondents agreed that Co-worker ensures the safety of fellow worker in AngloGold Obuasi mines and that 51.11% agreed that the company provides Safety induction, orientation and refresher courses to employees in the company. Finally, 40.00% agreed that the company conducting periodic fire drills at workplace to check for emergency responses and preparedness.

5.1.3 Compliance to Health and Safety Standards.

The study found that 70.00% of the respondents agreed that the company makes ensure that employees are not subjected to any unreasonable risks in the workplace, 58.89% of the respondents agreed that the company conduct periodic reviews to assess health and safety standards in the work place and 47.78% of the respondents disagreed that management timely response to health and safety concern.

Further, 60.00% of the respondents agreed that the company has well trained personnel for incident investigation procedures, 73.33% of the respondents agreed that their department has effective incident reporting procedure, and as much as 73.33% of the respondents disagreed that management do provide appropriate remedy for addressing accidents occurrence.

5.1.4 Challenges associated with health and safety practices

It is clear that the information gathered from respondents revealed that as much as 84.44% of the them strongly agreed that the provision of health and safety materials had been a cost burden on the organisation and 45.56% of the respondents agreed that the huge working population with low literacy rate and abysmal awareness of health and safety is a challenge in the company. 51.11% of the respondents disagreed that lack of clarity about the issues surrounding health and safety in the organization is a problem and about 57% of the respondents disagreed that getting the right personnel to help in promoting health and safety practices in the organization is a challenge.

Again, 51.11% of the respondents strongly agreed that management commitment to health and safety had been a challenge, 67.78% (representing 61 of the respondents) agreed that the company workers refusal to report minor injuries or near misses is a challenge in the company and 56.67% of the respondents agreed that workers refusal to wear personal protective equipment (PPES) in the organization is a challenge in AngloGold Obuasi mines.

As much as 84.44% of the respondents agreed that the cost involves in training employees on health and safety in the organisation is a challenge and 45.56% of the respondents agreed that changing

from the command and control style to engagement of the workforce on health and safety issues is a problem.

5.2 Conclusions

After assessing the effectiveness of health and safety practices in AngloGold Ashanti Company Ltd, the researcher found that more than 50 percent of the respondents strongly agreed that the company provides safe place of work for all employees and nearly two thirds agreed that the company ensures that employees are not subjected to any unreasonable risks in the workplace and that the company encourages workers to record near minor injury at work place. However, more than 50 percent of the respondents strongly agreed that lack of management commitment, workers refusal to report minor injuries or near misses and the cost involves in training employees on health and safety in the company are major problems. The study recommends that management of AngloGold Ashanti should not only provide adequate protective clothing, they should put in place a monitoring team tasked to go round to check whether the staff really do put on their protective clothing and materials given.

5.3. Recommendations

This section makes recommendations based on the findings of the study to stakeholders involved in the management of health and safety practices in AngloGold Ashanti. The recommendations hammer on the following area:

5.3.1 Regular education and training

Management of AngloGold Ashanti should regularly organize education, training, workshops, seminars on health and safety issues, publish materials on health and safety and many others steps to include safety consciousness in the minds of workers.

5.3.2 Making health and safety issues a collective responsibility

Management of AngloGold Ashanti should made employers to understand that safety and health practices are the obligation of both management and employees and this will go a long way to help make the work place safer.

5.3.3 Regular display of warning notices on defective and faulty equipment

Management of AngloGold Ashanti should constantly and regularly display warning notices on defective and faulty equipment and machines and or other potential hazard and dangerous places to make employees aware of any potential danger.

5.3.4 Monitoring health and safety compliance

Further, management of AngloGold Ashanti should not only provide adequate protective clothing, they should put in place a monitoring team tasked to go round to check whether the staff really do put on their protective clothing and materials given.

Finally, the government and other regulatory institutions should also establishment monitoring teams that will periodically go round to check whether mining companies are complying with health and safety practices as stipulated in the Labour Act 651.

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QUESTIONNAIRES

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

BUSINESS SCHOOL

This questionnaire is to enable me collect necessary information to complete my research on the topic:

ASSESSING THE EFFECTIVENESS OF HEALTH AND SAFETY PRACTICES AT ANGLOGOLD ASHANTI COMPANY – OBUASI MINE

All information provided in this study will be treated as confidential and your anonymity is assured.

Demographic Characteristics of Respondents

1. Gender: 1= Male [ ] 2= Female [ ]

2. Marital status: 1=Single [ ] 2=Married [ ] 3=Divorced [ ] 4=Separated [ ] 5= Widowed [ ]

3. Educational level: 0=No schooling 1=Primary education 2=Secondary education 3=Tertiary

4. State the department you are working.

…….

5. How many years have you been at post?

a. 0 – 5 [ ] b. 6 – 10 [ ] c. 11 – 15 [ ] d. 16 –20 [ ] e. 21years + [ ]

RESPONDENTS' VIEWS ON HEALTH AND SAFETY PRACTICES

Please tick below to express your opinion on the following questions?

6. Please tick from the options below to indicate your views on Health and Safety practices in AngloGold Ashanti, Obuasi mines.

i. A state of complete physical, mental and social wellbeing of workers. [ ]
ii. A process of achieving health and well-being of workers and the surrounding community. [ ]
iii. A process of protecting all members of the workforce against hazardous substances and prevention of workplace accident. [ ]
iv. A process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace. [ ]
v. Others (please specify)…….

7. My company provides safe place of work.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

8. My company provides adequate equipment, materials and personal protective equipment (PPEs) to enable employees to carry out their work safely.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

9. Safety materials provided by my organization are used all the time at the workplace.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

10. My company provides notices on all health and safety measures.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

11. Safety induction, orientation and refresher courses are conducted by my organization at the workplace.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

12. Fire drills are conducted periodically at the workplace to check for emergency responses and preparedness of the workers and systems.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

13. Co-workers in my organisation ensure the safety of fellow workers.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

The questions below are designed to test for the level of compliance of Health and Safety in AngloGold Ashanti according to OHSAS 18001 standards. Please indicate your level of agreement or disagreement to the issues.

14. My company ensures that employees are not subjected to any unreasonable risks in the workplace.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

15. My company encourages workers to record near misses at work place.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

16. My company conducts periodic reviews to assess health and safety standards in the work place.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

17. Management responds quickly to safety concern.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

18. Workplace inspections are conducted jointly by trained management and employee representatives.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

19. My company has persons trained for incident investigation procedure.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

20. My department has an effective incident reporting procedure that is known by employees.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

21. Management provide appropriate remedy for addressing accidents occurrence in my department.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

The questions below are formulated to seek for information on the challenges associated with the promotion of health and safety practices in AngloGold Ashanti. Please indicate your agreement or disagreement with the following questions.

22. The provision of health and safety materials had been a cost burden on the organisation.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

23. The huge working population with low literacy rate and abysmal awareness of health and safety is a challenge.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

24. Lack of clarity about the issues surrounding health and safety in the organization is a problem.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

25. Getting the right personnel to help in promoting health and safety practices in the organization is a challenge.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

26. Getting management to be committed to health and safety had been a challenge to the organization.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

27. Workers refusal to report minor injuries or near misses as a result of fear of being sacked is a challenge.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

28. Workers refusal to wear personal protective equipment (PPEs) in the organization is a challenge

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

29. How to influence workers to change their culture and behaviours towards health and safety in the organization is a challenge.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

30. Cost involves in training employees on health and safety in the organisation is a challenge.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]

31. Changing from the command and control style to engagement of the workforce on health and safety issues is a problem.

Strongly Agree [ ] Agree [ ] Disagree [ ] Strongly Disagree [ ] Neutral [ ]