UNIVERSITY OF CAPE COAST

OCCUPATIONAL HEALTH AND SAFETY (OHS) PRACTICES IN GOLDEN STAR WASSA LIMITED, IN THE WESTERN REGION OF GHANA

ROLAND ABUBAKAR ADAMS

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BY

ROLAND ABUBAKAR ADAMS

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DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my own work and that no part of it has been presented for another degree of this university or elsewhere.

Candidate's Signature……. Date……

Name: Roland Abubakar Adams

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

Supervisor's Signature…….....…Date.……..……

Name: Dr. Isaac Tetteh Kwao

ABSTRACT

Many African nations, including Ghana, are recognized for inadequate occupational health and safety (OHS) practices. Despite recent progress in OHS, significant challenges persist across the continent, particularly in Ghana. This research aimed to investigate the state of OHS practices at Golden Star Wassa Limited, located in Ghana's Western Region. The study employed a quantitative methodology with a descriptive research design. From a total of 880 employees, 275 were randomly chosen to participate. Data were collected using a questionnaire, which revealed that employees encounter safety, biological, physical, ergonomic, and psychological hazards, compounded by limited awareness campaigns and meetings. The findings also indicated that punitive measures were implemented to enforce adherence to OHS practices. Despite efforts to address OHS, interventions to mitigate workplace hazards remained insufficient. The study recommended that the Ghanaian government, in partnership with relevant organizations, should allocate funds to support comprehensive OHS training programs for mining workers at all levels. Additionally, it was recommended that Golden Star Wassa Limited's management and mining operators enhance enforcement of health and safety standards to better safeguard workers against occupational risks.

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DEDICATION

To the ADAMS family

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CHAPTER ONE

INTRODUCTION

Over the past three decades, the landscape of occupational health and safety (OHS) has transformed profoundly. Rapid technological advancements have ushered in innovative tools and systems, yet they have also introduced new workplace hazards that demand careful management. A wave of new safety laws has swept across nations, establishing stricter standards to protect workers. Regulatory bodies have intensified their oversight, ensuring that organizations adhere to these mandates. Business leaders have come to recognize that a safe and healthy workforce is not only a moral obligation but also a driver of greater productivity. Meanwhile, the soaring costs of healthcare and workers' compensation have pushed companies to prioritize preventive measures to curb financial losses. Public and environmental advocacy has grown louder, urging workplaces to adopt safer and more sustainable practices. Alongside this, a heightened emphasis on ethical business conduct has placed employee well-being at the forefront of corporate responsibility.

Background to the Study

A healthy workforce is essential for long-term social and economic growth on a local, national, and international scale, according to the World Health Organisation (2021). Nonetheless, instances of fatalities and injuries at work have surfaced (Danna & Griffin, 2019). In its global strategy on occupational health and safety (OHS), the International Labour Organisation (ILO, 2004) lamented the extent of the harm that significant industrial disasters and occupational accidents and diseases cause to people's lives and the associated financial expenses. In 2020, the International Labour Organisation

anticipated that 330 million work-related accidents and two million work-related fatalities still occur annually worldwide. The ILO estimates that each year, 200, 000 mining workers are killed. This is taking place in spite of national and international efforts to stop the situation.

In addition to workplace deaths and injuries, it is shown that unfavourable workplace health and safety conditions have an adverse effect on businesses and the general growth of the economy (Burton & World Health Organisation, 2020). According to research by the UK's Health and Safety Executives, work-related illnesses and injuries cost the economy more than £10 billion annually. On the other hand, a workplace that prioritises health and safety increases worker productivity, fosters employee loyalty to the company, creates a more capable and healthier workforce, lowers business expenses and disruptions, and motivates employees to have longer, more active lives (Robson et al., 2017). It is also argued that there are further justifications for enhancing worker safety and workplace health. Burton (2019) claims that there is a widespread call for a higher ethical standard of conduct for firms due to the detrimental effects that company scandals have on individuals and their families. By connecting their actions to the actual suffering and anguish of employees and their families, trade unions have specifically highlighted the flaws in the moral standards of many businesses. Burton consequently believes that it is a moral obligation for companies to establish a healthy workplace that does not compromise employees' physical or mental health.

Due to hazardous working circumstances in both developed and developing nations, there is a global need to improve workplace health and safety for employees (Hwey, 2016). However, it is noted that emerging nations

bear a disproportionate amount of the problem's burden. According to Hogstedt and Pieris (2020), emerging nations, where a larger portion of the labour population is still employed in mining and other primary production, have a greater need for increased workplace safety. They claim that in addition to the dangerous working conditions in these main jobs, there are a number of non-occupational issues that should be taken into account, including infectious and parasitic diseases, poor sanitation and hygiene, general poverty, and illiteracy. such many developing nations, Ghana has a sizable informal economy and some important industries, such mining, which are known to have a higher accident rate (Marrison, 2021). This is exacerbated by the absence of policies to address OHS concerns. The Factories, Offices, and Shop Act of 1970 is the main OHS law in Ghana, claim Dwumfour-Asare and Asiedu (2023).

According to Veiga and Beinhoff (2017), mining exploration and production activities invariably result in material and physical harm to the environment as well as to the local workforce and residents. Even when the best available practices are diligently followed, the mining industry's inherent processes of creating large-scale surface disturbances, producing large volumes of waste materials, and exposing previously buried geological materials to oxidation and precipitation forces may still result in complex environmental and health issues (Chiaro & Joklik, 2018). By exposing the environment and employees to contaminants like dust, fumes, and chemicals, the use of explosives and chemicals in many mining operations also poses health and safety risks.

The majority of African nations, including Ghana, struggle with occupational health and safety procedures because there have been few noteworthy attempts by the governments and companies (Regional Committee for Africa Report, 2021). Numerous actions have been done to safeguard the health and safety of workers at the national and industrial levels, despite the difficult efforts. However, a number of occupational health and safety hazards, risks, and diseases throughout the nation, as well as Golden Star Wassa Limited, whose employees work both day and night, demonstrate that occupational health and safety issues continue to receive little attention (Amponsah-Tawiah, 2023). Many people think that this is because there isn't enough political will. In a similar vein, it is evident that Golden Star Wassa Limited lacks both qualitative and quantitative action-research-based effective interventions. According to observations, there are negative attitudes regarding occupational health and safety procedures because Golden Star employers don't seem to care much about their workers' health and safety (Ministry of Health Report, 2017). To make matters worse, some employers are unaware of their legal obligation to do so. In light of this, the study aims to investigate Golden Star Wassa Limited's, Ghana's, occupational health and safety procedures.

Statement of the Problem

Research on occupational health and safety procedures has often been lacking. According to Barling, Loughlin, and Kelloway (2022), occupational health and safety has thus remained outside of the purview of conventional organisational and management research. Occupational health and safety procedures are hardly ever acknowledged as a significant factor in determining national development in most nations and businesses. Accordingly, it becomes

crucial for both developed and developing nations to mainstream occupational health and safety into their national agendas (Katsoulakos & Katsoulacos, 2017). It appears that occupational health and safety practices account for less than 1% of national and organisational research (Barling & Zacharatos, 2020). There is a severe dearth of literature on occupational health and safety issues, in addition to the general paucity of study emphasis on these topics.

In the western area, Golden Star Wassa Limited is a mining firm that produces and explores minerals. According to recent conversations with visiting senior inspectors from Ghana's Minerals Commission's (IDMC) Inspectorate Division, they would appreciate assistance from the Sustainable Minerals Institute's (SMI) Minerals Industry Safety and Health Centre (MISHC) in handling the OHS issues they encounter in the mining industry. The fact that the majority of people involved in mining activities are illiterate and nomadic is a significant obstacle for the IDMC. Since there are no trustworthy statistics, there are no official reporting procedures, systems, or models in place to use when creating or implementing OHS programs after health and safety issues have been detected. Furthermore, worker safety and the inspectorate's capacity to support Golden Star Wassa Limited employees are both severely impacted by the absence of formality in this industry.

In comparison to larger-scale mining operations, Golden Star Wassa Limited's operations are often labour-intensive, typically use a semi-skilled or unskilled workforce that rotates between day and night shifts, and have lower levels of mechanisation. As a result, production, productivity, recovery, and efficiency are much lower. The United Nations Development Program most recently published a document classifying these miners (rotating staff) as a

vulnerable group. Examining Golden Star Wassa Limited's occupational health and safety practices is therefore essential.

Objectives of the Study

The main objective of the study was to explore the level of occupational health and safety (OHS) practices in Golden Star Wassa Limited, in the Western region of Ghana. The specific objectives were to achieve the following:

1. Examine the various OHS hazards faced by employees of Golden Star Wassa Limited,
2. Explore the level of awareness of OHS requirement among employees of Golden Star Wassa Limited
3. Assess the level of compliance with OHS practices by employees Golden Star Wassa Limited

Research Questions

The present study seeks to answer the following questions:

1. What are the specific OHS hazards faced by Golden Star Wassa Limited workers?
2. What is the level of awareness of OHS requirements among Golden Star Wassa Limited workers?
3. What is the level of compliance with OHS practices in Golden Star Wassa Limited workers?

Significance of the Study

The performance of an organisation as a whole depends on a safe working environment in addition to its employees. For organisations like the one the report is about, accidents and injuries can have a significant financial and human cost. Employees can do their jobs more effectively when OHS

procedures are implemented, which can increase production. Furthermore, preventing accidents through better OHS affects an organization's entire performance and revenue, so the advantages go beyond simply lowering injuries.

Employees of Golden Star Wassa Limited would benefit from the study by learning about the advantages of implementing OHS as well as its legal implications for the company. For Golden Star Wassa Limited, this would be a significant step towards establishing a safer and more effective workplace. Additionally, the study would contribute to the nation's expanding body of OHS literature and provide as a resource for future research of a similar nature. Likewise, the study would help stakeholders and policymakers make decisions about an organization's safety and occupational policies.

Delimitation of the Study

The study was conducted at Golden Star Wassa Limited, at the Western region of Ghana. The study sought to explore the level of occupational health and safety (OHS) practices in Golden Star Wassa Limited. As such it excludes mining organisations in the municipality and region. The scope of occupational health and safety (OHS) practices is very broad; therefore, this study considered the level of awareness in terms of sufficient knowledge and awareness campaign. The study also measured the level of compliance in terms of lawful instructions, reasonable care taken, punitive measures and appropriate materials and equipment used.

Limitations of the Study

Descriptive research offers a restricted view of the region under study, and this picture frequently only reflects the surface. The approach is neither

inherently perceptive or probing. The possibility that respondents might not have given completely honest replies was another study drawback. A number of factors, such as social desirability bias and an effort to preserve private, may cause this. Furthermore, it is impossible to determine if a respondent has given the questionnaire careful consideration before responding. A structured questionnaire with closed-ended questions was part of the study's quantitative methodology. Saunders, Lewis, and Thornhill (2009) claim that it may result in the restricted outcomes mentioned in the study. Therefore, in a generalised form, the results may not always reflect what is actually happening. According to the researcher's choices, the respondents' alternatives for answers were also restricted.

Definition of Terms

Occupational Health and Safety has been defined as a branch of health services specifically concerned with health, safety and welfare of workers of all categories and has become an important aspect of the workplace.

Organisation of the study

The study is structured into five distinct chapters. The first chapter serves as the introduction, providing an overview of the study. It includes a concise discussion of the background, the problem statement, the study's objectives, its significance, the scope and limitations, and an outline of the research structure. The second chapter explores existing literature relevant to the study, offering a foundation of prior knowledge. The third chapter focuses on the study area and the research methodology employed. The fourth chapter presents the data analysis, offering a detailed descriptive account of the findings and an evaluation of the responses from the administered questionnaires. The fifth and

final chapter summarizes the study, draws conclusions, and provides recommendations based on the findings.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter examines the literature relevant to the research topic. It explores key aspects such as the importance of occupational health and safety (OHS), the definition and principles of OHS, and the state of OHS at Golden Star Limited, both globally and within Ghana. The chapter also addresses the management of OHS in the workplace, focusing on employees' awareness of OHS requirements and their adherence to safety practices at Golden Star Limited. The reviewed literature highlights prevalent hazards in the mining sector, including physical, biological, chemical, and environmental risks that impact workers' health and safety.

Theoretical Framework

Two influential theories that explore the organizational dimensions of health and safety are Normal Accident Theory (NAT) and High Reliability Organisation (HRO) theory. These frameworks offer distinct perspectives on managing risks and ensuring safety within complex workplace systems.

Normal Accident Theory (NAT)

According to the normal accident theory (Perrow, 1984), accidents are normal and inevitable in some systems. These system mishaps occur when several failures unexpectedly interact. A two-dimensional taxonomy of socio-technical systems based on the degree of couplings and interaction is presented by NAT. In a two-by-two table, Perrow illustrates these two dimensions to show that various systems can require various organisational strategies. The system should be abandoned if it is both tightly connected and interactively

complicated, as this makes it impossible to identify unexpected events. Simple, insignificant episodes might have terrible outcomes in such systems if they evolve in unanticipated ways.

Reducing tight coupling and interactive complexity may therefore be crucial in workplace design.According to Bellamy and Geyer (1992), there are too many intricately linked systems in the modern workplace for them to be abandoned, as Perrow suggests. Perrow (2007) examines the safety potential of the "Network of small firms," an alternative organisational paradigm. Low, multi-source dependencies are present in this architecture, and since other businesses can take over or modify the business, a single, unanticipated failure won't affect interdependencies. Small businesses' decentralised structure affects safety in both positive and negative ways. Good safety practices are necessary for small businesses to meet customer needs. However, these businesses lack the funding necessary to make improvements in occupational safety.

High Reliability Organisations (HRO) Theory

According to academics, high reliability organisations refute Perrow's Normal Accident Theory (LaPorte & Consolini, 1991). Research on companies that effectively manage complex technology forms the foundation of HRO theory. Failures in these organisations come at a socially unacceptable cost. HROs are characterised by their ability to manage complexity through (1) ongoing training, (2) redundancy, and (3) a multitude of direct information sources. Additionally, even in the event of unforeseen circumstances, HROs rarely fail (Weick & Sutcliffe, 2007). They reinterpret HROs as "mindful" entities. Continuous foresight and containment in the organization's operations are necessary when planning for high reliability.

The following three anticipatory concepts guide the operations of a mindful organisation: Deference to expertise (moving decision-making to levels where people come together to solve a problem); (1) a commitment to resilience (involving the ability to absorb and preserve, to recover, and to learn); and (2) the capacity to become aware of unexpected events through preoccupation with failures, reluctance to simplify, and sensitivity to operations.

Rationale for Occupational Health and Safety at the Workplace

Every nation's primary goal is to advance growth for the good of its people. However, every nation's workplace's bad health has a direct and immediate effect on its development in terms of the financial losses resulting from occupational illnesses and injuries (WHO, 2019). Elgstrand and Peterson (2019) claim that during the industrial revolution in Europe in the eighteenth and nineteenth centuries, there was a greater awareness of the dangers that employment poses to one's life, safety, and health. The public becomes more concerned about OHS issues as a result, and special agencies and legislation are established to safeguard the health and safety of workers. In order to achieve the goals of health and safety working conditions and environments in order to advance social justice and contribute to enduring peace in the world, OHS has been a primary concern for the ILO since its founding in 1919 and for nations (ILO, 2010).

Promoting workplace health and safety is done for a variety of other reasons. Human capital theory, which offers a suitable conceptual model for the administration of health benefits because people matter, is one of the arguments for encouraging OHS in the workplace (Catley et al., 2023). They maintained that although people can be thought of as a stock of capital that offers a flow of

services, investment can raise the amount and calibre of the human capital stack, just like it can with physical capital. However, a lack of investment in maintaining a healthy staff might have a detrimental effect on employee quality, which will result in low productivity. OHS specialists and productivity advocates had divergent opinions as a result of the debate over worker health and productivity.

Many OHS specialists saw terms like production, productivity, and effectiveness as derogatory and unimportant because engineers handled these matters (Elgstrand & Petersosn, 2019). While production engineers and managers were perceived as extracting profits from workers without taking into account their well-being, OHS specialists were only focused on the safety, health, and welfare of the workforce. Since worker health and productivity are interdependent and should be linked, this divide is deemed unnecessary (Ahasan, 2019).

According to a similar perspective, employers will be most impacted by the rise in chronic health issues across all age groups since they cover the costs of employee medical coverage, absenteeism, and both short-term and long-term disability claims. Therefore, according to Hymel (2021), companies should take occupational health and safety (OHS) issues seriously because the prevalence of sickness among employees will have a detrimental effect on company operations. However, the ILO and other human rights advocates contend that the right to health of employees should take precedence over productivity increases when discussing the topic of workplace safety and health.

According to the ILO, employers have an obligation to safeguard employees' fundamental human rights, including their right to health. The

human rights argument is supported by Neira, Legros, and Ivanov (2020), who claim that companies should embrace OHS because it is a part of society and ethical frameworks and that companies that disregard OHS or jeopardise workers' health are legally vulnerable to lawsuits and media attention, which will negatively affect their reputation.Regardless of how OHS is seen, it is crucial to note that it is a worldwide problem that is currently changing, particularly in the developing world. Tadesse and Admassu (2016) state that the primary cause of this appears to be the quick industrial and mining expansion occurring in developing nations. Potential effects on occupational health may be expected as many of these nations transition from manual work to service mechanisation in the primary production sectors, including mining, manufacturing, and agriculture. This reaffirms that, in order to promote worker wellbeing, OHS health concerns and the pursuit of increased productivity should be combined rather than viewed as mutually exclusive.

Concept of Occupational Health and Safety

The two main terms in the OHS concept are safety and health, where safety refers to the absence of risk of injury and health refers to the ability to grow and preserve one's functional abilities (WHO, 2021). This implies that in addition to providing protection from illness and accidents, the workplace should also support employees' personal growth. As a subset of health services, occupational health and safety is particularly focused on the welfare, health, and safety of employees across all classifications and has grown to be a significant workplace factor. According to Umeokafor, Isaac, Jones, and Umeadi (2014), who referenced Omoyemiju and Adediwura (2021), it is a health service that

requires employers—both public and private—to take reasonable steps to safeguard the health of their employees.

OHS is generally understood to be the science of anticipating, identifying, assessing, and controlling workplace hazards that may affect employees' health and well-being while also considering potential effects on the environment and nearby communities (Machabe & Indermun, 2023). According to Machabe and Indermun, in order to properly protect workers and the environment, a wide range of structures, abilities, knowledge, and analytical skills are required to coordinate and implement all the components that make up an OHS system. The goal of protection is to lessen or completely eradicate the risks of infection and injury from workplace hazards. Such hazards, according to Machabe and Indermun (2023), comprise biological, chemical, physical, ergonomic, and psychosocial elements that negatively impact workers' health and well-being. He went on to say that dangerous work circumstances and unsafe work behaviours are the two main kinds of reasons that lead to these hazards. The physical, chemical, biological, ergonomic, and psychosocial elements of the workplace are all highlighted by the hazardous working circumstances.

Conversely, risky work practices emphasise habits, lifestyle, adherence to rules and regulations, body types, and accident susceptibility.Clearer definitions of workplace risks and hazards have been provided to aid in the development of policies for efficient OHS management. Chau et al. (2017) define hazards as the possibility that any machinery, equipment, process, material (including biological and chemical), or physical elements could endanger human health or cause damage to the environment or property. On the other hand, risks are the likelihood that a worker may have an injury or health issue, or that property or

the environment will be harmed as a result of exposure to or interaction with a hazard. In relation to Golden Star Ltd., this is enlightening.

In the context of Golden Star Ltd.'s mining environment, industrial and mining workers are impacted by environmental hazards.The mining industry is one of the most harmful to human health globally, according to Hermanus (2017). Close contact with machinery, heavy chemical use, awkward working postures, and long hours are some of the health risks associated with mining labour. According to the ILO, a worker's death or injury can halt a lifetime of savings for their family members while also reducing a company's ability to compete and grow.With a sizable percentage of full-time and part-time employees, mining also has a distinctive workforce because it is still primarily a family of small-business operations (Nelson & Associates, 2020). The lack of social protection for mining workers also explains the seriousness of their exposure to hazards. In the majority of developing nations, mining is done in the informal sector, which is distinguished by its lack of social protection (ILO, 2002). Millions of people lack access to formal social protection mechanisms or are losing the extensive forms of protection offered by the formal sector as a result of the rise of the informal economy. Because they are more likely to be exposed to major occupational health and safety hazards and because their jobs and incomes are insecure, people in the informal economy are particularly in need of social protection, according to the ILO.

As Elgstrand and Peterson (2019) observed, the definition of OHS has progressively expanded from injury related to work to include the nature of labour, the larger workplace, and employees' well-being. Therefore, rather than being viewed as a distinct business activity, OHS management should be

viewed as a component of an organization's entire management structure. It is thought that OHS performance will be better during organisational transitions if it is more closely connected to an organization's core operations (Dollard & Bakker, 2020).

Legislative Provisions on Occupational Health and Safety in Ghana

To safeguard the health, safety, and welfare of all employees, the Ghanaian government has enacted numerous subsumed policies and acts, including as the Factories, Shops, and Offices Act 1970, Act 328, and the Labour Act 2003, Act 651. For instance, the Labour Act requires employers to make sure that all employees in Ghana work in safe, healthy, and satisfactory conditions (Labour Act, 2003 Act 651, Article 118:1). The 1992 Ghanaian constitution declares that "every person has the right to work under safe and healthy conditions," which is consistent with this clause (section 24: 1). Employees must follow their employer's instructions when using the safety appliances, firefighting supplies, and personal protective equipment that they are issued (Labour Act, 2003 Act 651, Article 118:3).

The Labour Act mandates that employers in Ghana provide personal protective equipment (PPE) to safeguard workers' health and safety. It also requires businesses to establish standards that promote employee well-being and to offer information, supervision, and training tailored to workers' literacy levels. Furthermore, the Act obliges employers to report any workplace accidents to the appropriate government authorities. In order to protect both their own safety and the safety of others, employees are required to show reasonable caution when doing their daily tasks at work. The Act gives each employer the freedom to choose how to implement the criteria. Because

different industries (employers) in Ghana have varying oversight of health and safety issues, this has inevitably resulted in a fragmented and disjointed health and safety policy bodies (Pupulampu & Quartey, 2022).

Ghana's oversight of workplace and worker safety is fragmented due to multiple agencies operating under different jurisdictions, each monitoring specific industries. For instance, the Road Safety Commission exists but exerts limited authority, with few regulations impacting the transportation sector or its drivers. The Mining Regulations of 1970, issued by the Minerals Commission, outline certain occupational health and safety (OHS) provisions tailored to the mining industry. However, numerous workplace incidents—such as accidents, illnesses, property damage, and operational losses—go unnoticed or unreported. These events are often underreported, misclassified due to inadequate standards, or overlooked because of unfamiliarity with existing guidelines (Asumeng, Lebbaeus, Asamani & Agyemang, 2015).

Sections 118 to 120 of the Labour Act, 2003 (Act 651), Part XV, provide apparent guidance on the responsibilities of employers and employees in managing environmental, health, and safety issues in Ghana. Yet, the Act lacks clarity on critical details, such as who should be notified about workplace accidents or occupational illnesses and how safety regulations should be enforced within organizations. It also fails to define what qualifies as an occupational illness or designate a specific authority to ensure compliance with corrective measures across Ghanaian industries. Consequently, there is no centralized national body, legislation, or framework governing OHS in Ghana. This creates a disconnect between the implementation of legislative provisions by employers and the diverse range of actual or potential adverse incidents

across various occupational settings in the country (Asumeng, Acquah-Coleman & Dadzie, 2015).

Ghana's legislative framework, including various Acts, mandates that both employers and employees play their parts in maintaining workplace health and safety. However, these laws largely overlook the practical steps needed to implement their principles, simply instructing businesses and workers to ensure safety measures are in place. As Ghanaians await the establishment of comprehensive occupational health and safety standards, there is an urgent need for a clear strategy to guide employers, employees, and regulatory bodies in improving the management and oversight of workplace health and safety (Kheni, Dainty & Gibb, 2018).

Types of Occupational Hazards

A thorough understanding of workplace hazards and their identification is crucial for developing and implementing an effective occupational health and safety management system. As noted by Mackay, Cousins, Kelly, Lee, and McCaig (2014), the primary objective of any injury prevention strategy should be to minimize exposure to risk factors, keeping them below a threshold that could cause harm. It is essential to recognize that hazards alone do not guarantee harm—whether injury occurs depends on multiple factors, including the toxicity of the hazard, exposure levels, the presence of risk factors, and the duration of exposure. Mackay et al. (2014) emphasize that effective prevention strategies require both surveillance and control measures, grounded in an understanding of the relationships between risk, hazard, and harm.

Research supports the connection between hazards and harm through risk factors, as demonstrated by Fitzpatrick & LaGory (2022) and Sapolsky (2023). To fully grasp this relationship, it is important to define key concepts: hazards, risks, and harm. Hazards are workplace elements—whether physical, psychological, or both—that have the potential to cause injury or adverse effects. These may include chemicals, slippery floors, prolonged standing, or ladder work, all of which carry inherent risks (Blaikie, Cannon, Davis & Wisner, 2024). Harm refers to the actual impact on workers' health, which can range from acute injuries to chronic physical or psychological conditions.

Juster, McEwen, and Lupien (2020) suggest that workplace stress may affect employees through shared biological pathways, linking physical and psychological health outcomes. Beyond individual health, harm can also have organizational consequences, such as absenteeism, errors, and reduced productivity (Mackay et al., 2024). Risk, on the other hand, refers to the likelihood that exposure to a hazard will result in harm. According to MOH (2010), risk is defined as "the probability that a hazard (e.g., exposure to toxic substances) will cause damage to health, life, or the environment." Assessing risk involves evaluating both the inherent danger of the hazard and the effectiveness of control measures in place.Major types of workplace hazards located in the occupational safety and health literature are presented below:

Safety Hazards: Safety hazards represent the most immediate and visible threats in occupational environments. Recent studies emphasize that falls from heights, machinery accidents, and electrical faults continue to dominate workplace injury statistics (OSHA, 2023). The construction and mining sectors report particularly high incidence rates, with inadequate fall protection and

improper equipment maintenance being primary contributors (NIOSH, 2022). Emerging technologies such as computer vision for hazard detection and wearable sensors for real-time monitoring show promise in reducing these risks (Zhang et al., 2023). However, implementation challenges persist due to cost barriers and workforce adaptation to new safety technologies (Hallowell & Gambatese, 2023).

The persistence of safety hazards highlights systemic issues in safety culture and training. A 2023 meta-analysis revealed that nearly 40% of safety incidents stem from procedural violations rather than equipment failures (Safety Science, 2023). This underscores the need for behavioral-based safety programs that address human factors in risk management. Recent innovations include virtual reality training simulations that improve hazard recognition skills, particularly among younger workers (Leder et al., 2023). Furthermore, the integration of artificial intelligence in near-miss reporting systems has demonstrated potential to predict and prevent accidents before they occur (Wang et al., 2023).

Biological Hazards: The COVID-19 pandemic dramatically reshaped understanding of biological hazards in workplaces. Current research identifies healthcare workers and laboratory personnel as highest-risk groups, with respiratory pathogens posing the greatest threat (WHO, 2023). Beyond traditional infectious diseases, new concerns have emerged regarding antimicrobial-resistant organisms in industrial settings, particularly in waste management and food processing (EU-OSHA, 2023). Recent outbreaks of zoonotic diseases in agricultural workers have prompted calls for enhanced biosecurity measures (Jones et al., 2023).

Climate change expands the geographic range of vector-borne diseases, creating new biological hazards for outdoor workers (Rocklöv et al., 2022). A 2023 study documented increased Lyme disease among forestry workers and West Nile virus infections in construction crews (Parasites & Vectors, 2023). Concurrently, advances in molecular detection methods now allow for real-time pathogen monitoring in workplace environments (Nature Biotechnology, 2023). These developments coincide with growing concerns about pandemic preparedness, driving investments in workplace ventilation upgrades and contactless technologies (Lancet, 2023).

Physical Hazards: Physical hazards have evolved significantly with technological advancements in industry. Recent findings indicate that non-ionizing radiation from 5G infrastructure and industrial IoT devices requires renewed safety evaluation (IEEE, 2023). Simultaneously, climate change has exacerbated temperature extremes, with a 2023 Lancet study attributing 20% more heat-related illnesses to rising global temperatures (The Lancet, 2023). Noise pollution remains intractable, with current research linking chronic exposure to cardiovascular disease beyond just hearing loss (Epidemiology, 2023).

Emerging physical hazards include blue light exposure from digital devices and novel musculoskeletal risks from exoskeleton use (Applied Ergonomics, 2023). A 2023 systematic review found that improperly calibrated exoskeletons may actually increase injury risk for some tasks (Journal of Biomechanics, 2023). Meanwhile, the renewable energy sector faces new physical hazards from wind turbine maintenance and solar panel installation at height (Renewable Energy, 2023). These developments necessitate updated

safety standards and personal protective equipment designs to address 21st-century workplace challenges (Safety Science, 2023).

Ergonomic Hazards: The digital transformation of workplaces has introduced unprecedented ergonomic challenges. Remote work arrangements have led to a surge in musculoskeletal disorders related to improvised home offices (Journal of Occupational Medicine, 2023). Current research identifies "tech neck" and thumb tendonitis as increasingly common conditions among office workers (BMC Musculoskeletal Disorders, 2023). Paradoxically, the automation of manual tasks has created new ergonomic risks in monitoring and maintaining robotic systems (Human Factors, 2023).

Advanced manufacturing presents unique ergonomic dilemmas as workers interact with collaborative robots (cobots). A 2023 field study revealed unexpected strain patterns when humans adapt movements to accommodate robotic coworkers (IEEE Robotics, 2023). Meanwhile, the gig economy has exacerbated ergonomic risks for delivery workers, with e-bike riders showing high rates of vibration-related disorders (Transportation Research, 2023). These trends highlight the need for dynamic ergonomic assessments that account for evolving work modalities and technologies (Applied Ergonomics, 2023).

Chemical Hazards: Nanotechnology advancements have created new frontiers in chemical hazard management. Recent toxicological studies demonstrate that engineered nanoparticles exhibit unique biological interactions not predicted by conventional chemical safety models (Nature Nanotechnology, 2023). The growing use of lithium-ion batteries in manufacturing presents novel fire risks and exposure concerns (Journal of Hazardous Materials, 2023). Concurrently, climate change is altering chemical exposure patterns, with

wildfire smoke creating unpredictable outdoor work hazards (Environmental Science & Technology, 2023).

The endocrine-disrupting effects of many industrial chemicals have gained increased recognition. A 2023 WHO report identified over 1,000 workplace chemicals with suspected endocrine activity (WHO, 2023). Green chemistry initiatives aim to reduce these risks, but substitution challenges persist for many essential industrial processes (Green Chemistry, 2023). Meanwhile, advances in real-time chemical sensing enable more precise exposure monitoring, though interpretation of complex mixture effects remains challenging (ACS Sensors, 2023). These developments underscore the need for next-generation chemical safety paradigms that address emerging contaminants and cumulative exposure risks.

Psychological Hazards: The mental health crisis in workplaces has reached unprecedented levels post-pandemic. A 2023 WHO global survey found that 60% of workers report significant stress-related symptoms, with healthcare and education sectors most affected (WHO, 2023). New research identifies "digital presenteeism" - the pressure to be constantly available online - as a growing psychological hazard (Journal of Occupational Health Psychology, 2023). The rise of algorithmic management in gig work has created additional stressors through loss of autonomy and unpredictable schedules (Nature Human Behaviour, 2023).

Emerging psychological risks include trauma from workplace violence, particularly in retail and healthcare settings (Occupational Medicine, 2023). A 2023 meta-analysis linked workplace bullying to long-term cardiovascular risks, expanding understanding of psychosocial hazard impacts (European

Heart Journal, 2023). Concurrently, climate anxiety is emerging as a new stressor for outdoor workers facing extreme weather events (Nature Climate Change, 2023). These findings drive demand for psychologically safe work design and mental health-first responder programs in occupational health strategies (Journal of Occupational Health, 2023).

Management of Occupational Hazards

Effective management of occupational hazards is essential for maintaining a safe and healthy work environment. The process begins with a thorough assessment of workplace risks, which serves as the foundation for developing appropriate control measures. Risk assessment, as defined by the European Commission (2016), involves systematically examining work activities to identify potential sources of harm and determine whether hazards can be eliminated or require protective measures. This concept is further elaborated by Edwards et al. (2008), who describe hazard assessment as a careful evaluation of workplace conditions to ensure sufficient precautions are in place to prevent injuries or illnesses. The World Health Organization (2018) emphasizes that these assessments should quantify exposure levels and clarify the relationship between hazards and potential harm, helping organizations understand how workplace risks translate into adverse outcomes.

The effectiveness of hazard management depends significantly on strong leadership commitment. Senior management must demonstrate unwavering dedication to workplace safety by conducting regular hazard assessments and implementing preventive measures. Research shows that involving workers in hazard identification significantly improves safety outcomes, as employees often recognize risks that may not be immediately apparent to management

(Cox & Cheyne, 2020). The Government of Alberta (2021) recommends periodic reviews of hazard assessments, particularly when introducing new equipment, processes, or work environments. Employees also share responsibility for safety by adhering to established protocols and participating in safety initiatives, as required by labor regulations such as the Labour Act (2003).

A comprehensive approach to hazard identification involves thorough workplace inspections and consultation of manufacturer safety data. Frontline workers provide valuable insights during this process, as their daily experiences expose them to potential risks that might otherwise go unnoticed. Hazards should be systematically categorized into biological, chemical, physical, ergonomic, and psychological types to ensure all potential risks are addressed. Once identified, the next critical step involves evaluating who might be harmed and assessing the severity of potential consequences. Special consideration must be given to vulnerable groups such as new employees, pregnant workers, and contractors, who may face elevated risks.

The hierarchy of controls provides a structured approach to risk mitigation, with elimination being the most effective strategy and personal protective equipment serving as a last resort. Engineering controls, which modify equipment or processes to reduce hazards at their source, often provide more reliable protection than administrative measures or PPE alone. Recent studies highlight the importance of combining multiple control methods for optimal risk reduction (NIOSH, 2023). Effective communication of safety procedures and established reporting systems for incidents and near-misses are equally crucial components of a robust safety program.

Documentation plays a vital role in occupational hazard management, serving both regulatory compliance and continuous improvement purposes. Maintaining detailed records of hazard assessments, control implementations, and training activities enables organizations to track safety performance and identify areas for enhancement. Regular program evaluations help organizations adapt to emerging risks and changing workplace conditions. Engaging occupational health professionals and industrial psychologists can further strengthen safety initiatives by providing specialized expertise in risk assessment and mitigation strategies.

As workplaces continue to evolve with technological advancements and changing environmental conditions, safety programs must remain dynamic and responsive. The integration of innovative solutions such as artificial intelligence for hazard detection and advanced monitoring systems represents the next frontier in occupational safety. However, these technological approaches must be complemented by strong safety cultures and employee engagement to achieve sustainable improvements in workplace health and safety outcomes. By implementing systematic hazard management processes and fostering collaborative safety cultures, organizations can effectively protect their workforce while maintaining operational efficiency.

Status of OHS Issues in Golden Star Limited

Working in the mines has many dangers as Hoffmann and Schlosse (2001) stated that workers encounter fire, hazardous atmospheres (e.g., chemical hazards, toxic gases, oxygen displacement), energy sources (e.g., electrical, gas, nuclear), physical (e.g., structure, traffic, topography), biological and environmental. Greenhouse (2005) writing in New York Times reports that

Human Rights Watch found that jobs in most mining companies were so dangerous that they violated international agreements that promised a safe workplace. According to inspectorate division of the Golden Star Wassa Limited, the total number of injuries that occurred during the 2017 year was twenty- five of which none were fatal. The injuries led to a loss of 30,000 hours lost on shift working hours. Other issues considered under the status of the OHS issues included safety monitoring, inspections and audit, safety training, risk management and root causes for injuries.

Empirical Review in Awareness of OHS Issues and Compliance by workers and Employers at the Workplace

As was said before, there are good economic and other reasons to reduce work-related accidents and bad health. It is thought that strategic initiatives meant to improve an organization's overall performance are directly linked to effective OHS management (European Agency or Safety and Health at work, 2010). OHS management does, however, confront certain obstacles, such as employers' and employees' understanding of OHS issues and adherence to workplace standards. According to the ILO (2010), OHS practice encompasses important areas like educating people about OHS issues, making sure national laws and regulations—including inspection systems—are followed, exchanging information about risks and hazards and how to mitigate them, and providing training for both employers and employees. At the corporate level and beyond, it is thought that taking this action will support the development of a preventive OHS culture and favourable views towards OHS.

Being aware of something or a situation is defined by the Oxford Dictionary as knowing about it or perceiving it. Workers must be aware of the implications of dangerous and subpar working conditions on productivity and health when it comes to OHS awareness at the workplace. Perceptions of workplace safety difficulties are linked to variables including accident rates, anxiety, and employees' adherence to safety procedures, claim Kwon and Kim (2013). They contend that employees are more likely to be aware of the risks associated with their jobs and make an effort to avoid them when accidents are common and compliance is required. However, Gyekye (2006) discovered that employees in the high-accident category had a poor impression of safety in a study on workers' attitudes of workplace safety in Africa. They had a bad opinion of coworkers' and managers' contributions, safety programs, and work safety. In addition, they were less dedicated to safety management procedures and showed lower levels of job satisfaction. The distinction between these two viewpoints would suggest that when compliance is required is the primary persuasive argument.

Another perspective holds that the ability of the company to provide its employees with information about workplace hazards determines whether or not they will be aware of them. According to the Disease Control Priorities Project (2007), a workplace's decision to implement successful interventions to manage occupational hazards is frequently influenced by cost. However, Ahmed and Newson-Smith (2010) stressed that while cost is a significant factor, workers' awareness of OHS hazards is improved by the information they are given about these hazards, which is made possible by their educational attainment and access to OHS training courses. Regular safety awareness

initiatives are conducted. Nunez and Villanueva (2011) argued that a reduced incidence of occupational accidents is directly correlated with both safety awareness and safety knowledge. Employee understanding of OHS issues is also influenced by the size of the company.

Nenonen (2012) asserts that there is substantial evidence to support the conclusion that employees of small businesses face more risks than those of bigger ones due to the challenges small businesses have in managing risk. This is consistent with Forastieri's (1999) claim, which was referenced in Das, Pagell, Behm, and Veltri (2008), that micro-enterprises have very little knowledge about the long-term negative impacts of hazardous working circumstances as well as tips for enhancing worker protection. Small enterprises typically have low unionisation rates, correspondingly inconsistent rules and standards, and a wider power imbalance between management and labour. Their low levels of health and safety knowledge and training may be partially explained by the lack of unions in small business-dominated industries (Eakin et al., 2010).

The Utterback, Schnorr, Silverstein, Spieler, Leamon and Amick (2012) stated that workers have the right which when they applied and respected by supervisors should increase their awareness of workplace safety. For example, workers have the right to talk to the employer about actual or perceived hazards, participate in a health and safety activities, and file a complaint with appropriate government agency if they think there is a hazard that is violating one of the laws that protect them. Respect for this right can increase the confidence of the workers in the system and thus make them proactive in ensuring health and safety work conditions at the workplace. On the other hand, it is believed that when workers take personal responsibility for their safety, they become aware

of what is required for their safety at work and take steps to make their workplace health and safety (Safe Work Australia, 2011).

According to some OHS experts, employees' understanding of workplace safety may be influenced by their job status. Kimmel, French, Anderson, Gauge, Johnson, Rosenberg, and Caldwell (2013) state that because temporary or casual employees are frequently far away from the daily decisions made by management, they may not be fully aware of how safety issues are taken into account by management. They also stated that many safety-promoting management choices and actions are never known or understood by employees in the absence of efficient communication mechanisms. There should be intentional steps taken in certain situations to inform employees of the occupational hazards they face.

According to Schuckit's (2006) study on occupational risk and perception, most mining workers were aware of the consequences of biological agents and allergies. They were surprised to learn, however, that health professionals themselves were unaware of the same risk. Instead of making any assumptions in that situation, they suggested that deliberate training or communication on biological risks be provided to everyone who needs to know. It is not enough for employees to only be aware of the occupational hazards associated with their profession; they also need comprehensive information that includes preventive measures. Accordingly, the Occupational Health and Safety Administration (2011) mandates that companies in the United States of America provide workers with training and useful information about workplace hazards in a language they can understand. This is necessary since a Nigerian study found that workers were aware of Occupational Hazards but lacked knowledge of how

to prevent them (Abiodun, Fatungase, Olu-Abiodun, Idowu-Ajiboye & Awosile, 2013).

Compliance presents another difficulty when putting OHS into practice. "Compliance" is defined by the Oxford Dictionary (2006) as operating in accordance with rules or standards; policies, systems, and regulations are typically established or adopted to guarantee compliance. Nonetheless, one school of thought contends that in order to ensure compliance, the worker who is the subject of the policy should be examined in addition to the organisation, the regulations, or the system in question. As living creatures, workers must be involved in improving working conditions and should be involved at all levels in decisions that impact their lives, such as those pertaining to workplace safety and health measures (Franco, Bennett, & Kanfer, 2002). My workplace should have a health and safety representative in order to regulate health and safety in the mining industry, according to Mills (2016)

Clear environmental regulations will be necessary to involve workers in OHS issues. For instance, the Labour Act of 2003 (Act 651) serves as the foundation for a number of Ghana's OHS regulations. The Act outlines the obligations of both employers and workers with regard to OHS. It declares that the employer has a responsibility to supply the necessary tools and supplies for the job and to take all reasonable precautions to guarantee the worker's safety while on the employer's property or while working for the company. On the other hand, the employee has an obligation to take reasonable precautions for the health and safety of coworkers, follow legal instructions for work execution, and exercise appropriate care when performing assigned tasks. Nonetheless, it is maintained that the policy's implementation is incomplete and that Ghana's

OHS concerns require greater focus (Quartey & Puplampu, 2012). Additionally, in order to raise awareness of workplace hazards, businesses were required to have a copy of the Occupational Health Safety Act on their premises (Rogers & Ostendorf, 2001).

Industrialised countries such as Australia in their OHS compliance and enforcement policies have charged specific workplace health and safety authorities with the responsibility of ensuring compliance (Government of Australia, 2008). Such policies use a wide range of strategies to ensure OHS compliance in the workplace. These include the use of education, inspection, advice, enforcement, and where warranted, prosecution. The emphasis is on assisting industry to comply with OHS obligation through the provision of programmes that build industry capability to manage workplace risks. Champoux and Brun (2023) also, mentioned that employer must takes practicable steps to ensure that employees are safe during the course of work.

Spellman and Bieger (2018) contend that while institutions are tasked with maintaining compliance, employees should be particularly aware of potential hazards to themselves and that other employees can take precautions to reduce risks by carefully choosing appropriate tools and equipment. This emphasises how important it is for employees to take the initiative to comply with OHS regulations. Reporting accidents or hazards is a proactive way to ensure that any issues are addressed. However, according to Wong, McGregor, Mior, and Loisel (2014), employees in the mining sector are reluctant to disclose injuries for fear of losing their jobs. Furthermore, a lot of companies give supervisors an annual bonus for reducing the quantity of worker compensation claims at the workplace. According to Robson, Clarke, Cullen, Bielecky,

Severin, Bigelow, and Mahood (2017), employees must follow legal instructions about how to perform their jobs in order to comply with occupational health and safety regulations.

According to Burke, Clarke, and Cooper (2011), certain organisations and advocates working on OHS concerns believe that punitive methods are more likely to guarantee compliance. For example, Safe Work South Africa (2011) looked into a mining business injury case and led to the firm's conviction. According to the findings of the investigations, the company failed to do a risk assessment of the task, create a safe work procedure for the risk, provide sufficient preventive measures, and document training. The business was ultimately found guilty and forced to put policies in place to stop similar incidents in the future. Matsuura (2016) added that businesses should supply the right tools and supplies for their jobs.

According to the British Mines Corporation (2014), compliance is essential in the mining sector. As a result, the Corporation considers it crucial that employees, particularly managers, supervisors, and health and safety managers, get training and education. Employees should learn about company standards, how to ensure that they are upheld, and how to use them when necessary. They should also learn about hazards in their area of responsibility. On the other hand, as a means of guaranteeing compliance, the Australia Gold Mine Ltd Council (2020) highlighted the adoption of comprehensive measures such inclusive human resource policies on adherence to pertinent employment acts and awards and disciplinary procedures.

Information, counsel, persuasion, cooperation, inspection, verification, compulsion, and deterrent activities are just a few of the many compliance

techniques used in the modern workplace. By offering programs that increase industry capacity to effectively manage workplace risks, the main focus is on helping industry meet OHS requirements (Head of Workplace Safety Authorities, 2008). Regarding the efficacy of the tactics employed, Health and Safety Ontario (2011) has distinguished between frightening employees with the threat of penalty and convincing them to comply with rewards. However, it claims that the best behaviour is that which occurs while no one is looking, i.e., when employees take responsibility for their own workplace safety.

Conceptual Framework

Based on a comprehensive theoretical review, a conceptual review, and an empirical review, this part constructs and refines the conceptual framework for this study. One versatile analytical tool that can be applied in several contexts is a conceptual framework. It offers a graphic explanation of the key ideas, variables, connections, and background of the research. A conceptual framework justifies why a certain study must be conducted, claim Varpio et al. (2020). The conceptual framework highlights the gaps in understanding of a phenomenon or issue, describes the state of the information that is already available, usually through a study of the literature, and describes the methodological underpinnings of the research endeavour. "Why is this research important?" and "What contributions might these findings make to what is already known?" are the two questions it aims to answer. The study's direction and objectives are in line with the conceptual framework depicted in Figure 1.

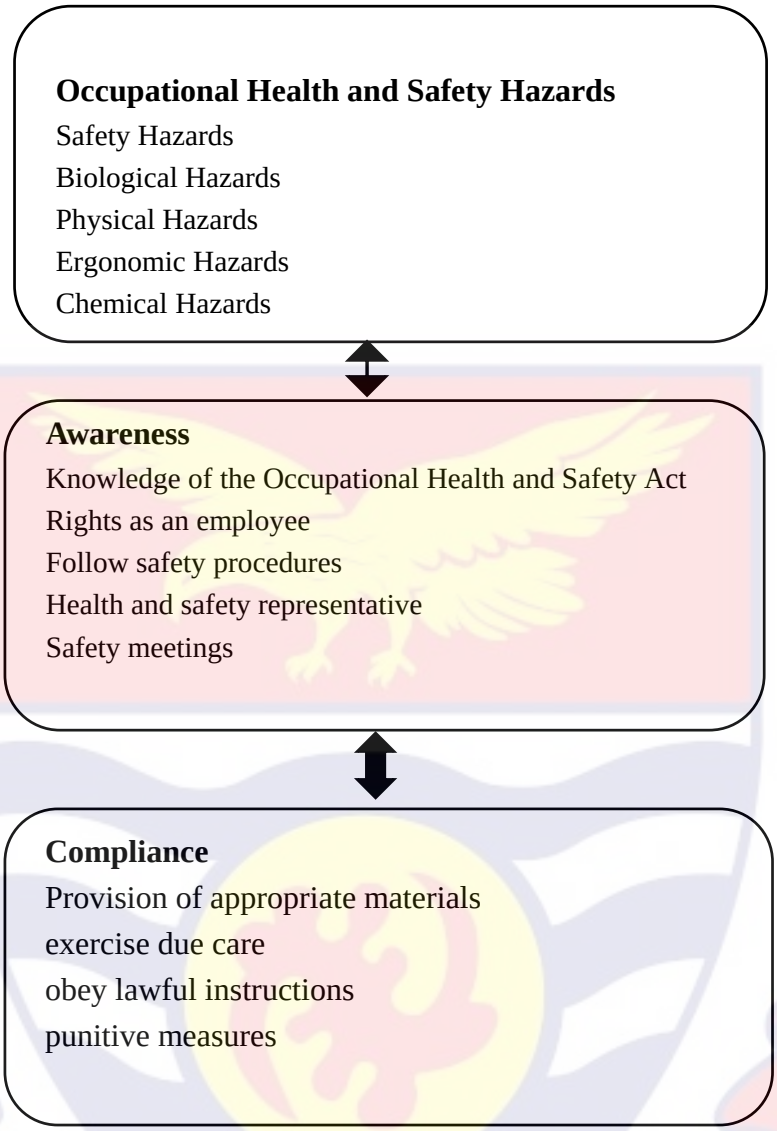

Figure 1: Conceptual Framework

Source: Author's construct (2024)

A well-structured conceptual framework highlights the importance of identifying workplace hazards to establish a robust occupational health and safety (OHS) management system. As Mackay, Cousins, Kelly, Lee, and McCaig (2014) emphasize, the key objective of any injury prevention strategy should be minimizing exposure to risks until they reach an acceptable threshold. It's important to note that hazards themselves are not inherently harmful but rather indicate the possibility of harm if not properly managed. Another

challenge in implementing occupational health and safety (OHS) is ensuring compliance. Additionally, workers must understand the impact of unsafe and poor working conditions on both productivity and health. Kwon and Kim (2013) state that perceptions of workplace safety issues are influenced by factors such as accident rates, stress, and employees' adherence to safety protocols. They argue that when accidents are frequent and compliance is emphasized, workers are more likely to recognize the dangers in their work and take steps to avoid them.

Chapter Summary

Although significant progress has been made in occupational health and safety (OHS), leading to improved injury and illness prevention measures, many organizations still face persistent challenges. Workplace risks continue to threaten employee well-being, damage equipment, disrupt operations, and undermine the economic performance and competitiveness of businesses and communities. The consequences of occupational accidents and diseases are far-reaching: workers suffer injuries, machinery is damaged, productivity declines in both quantity and quality, and financial losses accumulate due to absenteeism and early retirements. These factors also harm an organization’s reputation and market position. Given these impacts, this study examines key aspects of OHS, including its workplace rationale, legal requirements, hazard classification, risk assessment methods, and the importance of awareness and compliance.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter outlines the methodological approach employed in the study. It details the research design, target population, and sampling strategies utilized. Additionally, it covers the development and application of data collection instruments, fieldwork procedures, ethical considerations, and the proposed framework for data analysis.

Research Approach

This study adopts a quantitative research approach, a methodological strategy that is increasingly endorsed in contemporary business and management studies (Curran & Blackburn, 2020). The quantitative paradigm operates on the fundamental premise that human behaviors and organizational phenomena, much like physical occurrences in natural sciences, can be systematically measured and quantified (Fetters, Curry & Creswell, 2013). This approach proves particularly valuable as it facilitates the examination of relationships between well-defined variables through standardized measurement techniques.

The selection of a quantitative design is particularly appropriate for this investigation as it enables: (1) the collection of empirical data through structured research instruments, (2) the systematic measurement of predefined study concepts, and (3) the statistical analysis of relationships between identified variables. This methodological rigor enhances the reliability and objectivity of the findings while allowing for potential generalization of results to broader populations. The standardized nature of data collection in quantitative research

further ensures consistency in measurement across different respondents and research contexts.

Research Design

The research design serves as the methodological blueprint that guides the systematic investigation of the study's central questions. For this research, a descriptive research design has been selected as the most appropriate approach, given its ability to accurately document and analyze existing conditions without experimental manipulation.

Descriptive research is fundamentally an observational scientific method that involves systematically gathering, organizing, and interpreting data to provide a clear and objective representation of a phenomenon (Sarantakos, 2005). Unlike experimental designs that seek to establish causality, descriptive research focuses on presenting an accurate snapshot of current realities, making it particularly suitable for studies aiming to assess prevailing conditions, perceptions, or behaviors.

The choice of a descriptive design is further justified by its incorporation of cross-sectional methodology, which allows for efficient data collection through structured instruments such as questionnaires or standardized interviews (Buchanan & Bryman, 2017). This approach is well-suited for the present study, as it enables the researcher to gather empirical evidence about existing workplace health and safety conditions while also capturing employees' perceptions and attitudes at a specific point in time.

One of the key strengths of the descriptive cross-sectional design lies in its ability to produce reliable and objective data about current phenomena (Nwadinigwe & Azuka-Obieke, 2012). By employing standardized data

collection instruments, this approach ensures methodological consistency across respondents while also facilitating comparative analysis between different groups or variables. Moreover, the design's efficiency in collecting data from diverse populations within a defined timeframe makes it particularly practical for organizational research contexts.

The descriptive approach aligns precisely with this study's objectives of documenting existing occupational health and safety conditions, analyzing employee perceptions, and establishing baseline data for future research. While this design does not permit causal inferences, its rigorous observational methodology provides the necessary foundation for understanding current workplace realities and identifying potential areas for intervention.

Study Area

The research was conducted at Golden Star's Wassa mining operation, situated approximately 40 kilometers northeast of Prestea in southwestern Ghana. This location represents a significant case study due to its operational evolution from surface mining to underground-focused production, a transition completed in 2018 following the successful commencement of commercial underground operations in January 2017. The Wassa mining complex features geologically complex deposits organized into six distinct mineralized domains, each presenting unique operational challenges. These gold-bearing formations occur within altered greenstone-hosted quartz-carbonate veins that are interlaced with sedimentary pelitic units, creating specific safety considerations that warrant detailed examination.

The selection of this research site was deliberate and justified by several important factors. The operation's transition from surface to underground

mining presents evolving safety challenges that merit scholarly attention. The complex geological conditions necessitate specialized safety protocols and procedures that may differ from more conventional mining operations. As a mature operation with established safety systems, the site offers valuable

Population of the Study

The study population constitutes the specific group or community that forms the focus of research and serves as the basis for generalization of findings (Babbie, Halley & Zaino, 2017). As Kotzab (2015) further clarifies, the study population represents the complete set of respondents or elements that are relevant to the research inquiry. For this particular study, the target population encompasses both senior and junior employees working at Golden Star Wassa Limited.

The total workforce at Golden Star Wassa Limited consists of 880 employees, comprising 100 senior staff members and 780 junior staff members. This employee population operates on a shift system, with some staff members working during daytime hours while others are assigned to night shifts. The inclusion of both senior and junior employees in the study population is deliberate, as it allows for a comprehensive examination of occupational health and safety perspectives across different organizational levels and work schedules.

The selection of this specific population is justified by several considerations. First, the inclusion of both senior and junior staff enables the research to capture diverse perspectives on safety practices, ranging from managerial to operational levels. Second, the incorporation of employees working different shifts (day and night) accounts for potential variations in

safety experiences and perceptions that may be shift-dependent. Third, the substantial size of the workforce provides an adequate base for drawing meaningful conclusions about safety practices within the organization.

This population structure reflects the actual composition of the mining company's workforce and ensures that the research findings will be representative of the entire employee base at Golden Star Wassa Limited. The study's focus on this defined population enhances the validity of the research outcomes while maintaining practical relevance for organizational decision-making regarding occupational health and safety matters.

Sample and Sampling Procedure

The sampling methodology for this study was carefully designed to ensure representative data collection from the target population. As Bryant and Shimizu (2018) conceptualize, the sampling frame serves as the actual list of population elements from which research participants are selected. This study's sampling frame comprised the complete roster of 880 employees at Golden Star Wassa Limited, including both senior (100) and junior staff (780) across all work shifts.

Bambale's (2014) principle that a sample represents a proportional subset of the population for investigation guided the sampling approach. Gravetter's (2012) definition of sampling as the deliberate selection of participants for data collection further informed the methodology. From the total population of 880 employees, a scientifically determined sample size of 275 respondents was selected for participation in the study.

The sample size calculation employed Yamane's (1967) statistical formula:

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

where:

n = required sample size

N = total population (880)

e = margin of error (0.05 at 95% confidence level)

Applying this formula:

$n = 880 / \{1 + 880(0.0025)\}$

$n = 880 / \{1 + 2.2\}$

$n = 880 / 3.2$

$n = 275$

This calculation yielded an optimal sample size of 275 respondents, representing approximately 31.25% of the total population. The selected margin of error (5%) and confidence level (95%) ensure statistically reliable results that can be generalized to the entire workforce while maintaining practical feasibility for data collection.

Data Collection Instruments

The selection of appropriate research instruments constitutes a critical component of methodological design, as these tools facilitate the systematic measurement of study variables. Research instruments encompass various written or physical devices employed to gather and quantify data, with the specific choice dependent on both the nature of the data required and the research objectives (Coughlan, Cronin & Ryan, 2012). Instrument selection requires careful consideration of multiple factors, including measurement validity and reliability, administration feasibility, response acquisition efficiency, and interpretation clarity.

For this study, a structured questionnaire served as the primary data collection instrument, specifically designed to gather quantitative data from respondents. This methodological choice aligns with Boynton's (2014) assertion that questionnaires offer an efficient means of soliciting comprehensive information within constrained timeframes. The questionnaire format was particularly suitable for this research context as it permitted respondents adequate time to consult relevant records when addressing sensitive questions, thereby enhancing response accuracy - a methodological advantage noted by Sivo, Saunders, Chang and Jiang (2016). The questionnaire incorporated both closed-ended and open-ended question formats, each serving distinct but complementary research purposes:

Closed-ended questions provided structured response options that facilitated immediate data analysis through their standardized format. This design feature enabled efficient quantification of responses while maintaining consistency across participants. The inclusion of predetermined response alternatives for each question item helped guide respondents and ensured complete, comparable data sets.

Open-ended questions were strategically incorporated to capture nuanced qualitative insights that might otherwise remain undiscovered through fixed-response formats. These items allowed participants to articulate personal perspectives in their own words, often revealing underlying rationales or contextual factors that enriched the quantitative data. Such responses frequently yielded unanticipated but valuable information that either directly or indirectly informed the study's findings.

The dual-format questionnaire design achieved an optimal balance between quantitative rigor and qualitative depth, addressing the study's need for both standardized measurement and comprehensive understanding of occupational health and safety perceptions. This hybrid approach enhanced the research instrument's capacity to generate robust, multidimensional data while maintaining the practical advantages of survey methodology. The thoughtful integration of different question types strengthened the instrument's ability to capture both the prevalence and the underlying nature of safety-related attitudes and experiences among mining personnel.

Data Collection Procedure

The data collection process followed rigorous ethical and methodological protocols to ensure both the quality of responses and compliance with research standards. Prior to administration, the study's objectives and significance were thoroughly explained to all potential respondents. This preparatory step served multiple purposes: it enhanced participants' understanding of the research, fostered cooperation, and facilitated subsequent questionnaire retrieval - a critical factor in achieving satisfactory response rates.

Formal authorization for data collection was obtained from Golden Star's management through official channels, ensuring organizational approval and compliance with corporate research protocols. Following this approval, the self-administered questionnaire approach was implemented with carefully selected participants who met the study's inclusion criteria. The random selection of respondents helped maintain the sample's representativeness while minimizing selection bias.

The self-administration method offered several distinct advantages for this study. First, it allowed respondents to complete the questionnaires at their own pace, potentially yielding more thoughtful and accurate responses. Second, this approach provided opportunities for the researcher to establish personal rapport with participants, a factor that Leedy and Ormrod (2020) identify as crucial for improving both response quality and recovery rates. Third, the direct interaction enabled immediate clarification of any questions or concerns respondents might have about the survey items.

Data Processing and Analysis

The transformation of raw questionnaire responses into meaningful, actionable insights required a rigorous and systematic analytical process. Following data collection, all retrieved questionnaires underwent comprehensive screening to ensure data quality and completeness. Each questionnaire was meticulously examined for response consistency, clarity of answers, and recording accuracy. Incomplete or inconsistent responses were identified and excluded from the final dataset to maintain analytical integrity. To safeguard against data loss or duplication, a unique identification number was assigned to each valid questionnaire, creating an auditable trail throughout the analysis process.

The data preparation phase employed SPSS Version 26.0 as the primary analytical platform. A detailed codebook was developed to standardize variable entry, with particular attention given to maintaining the fidelity of both quantitative responses and qualitative comments. The digital coding process incorporated multiple validation checks to minimize entry errors and ensure

data accuracy. Regular backups preserved the integrity of the dataset throughout the transformation from raw responses to analyzable information.

Descriptive statistical methods formed the core of the analytical approach, with specific techniques carefully matched to each research objective. For assessing current safety conditions (Objective 1), the analysis calculated frequency distributions and percentages to establish prevalence rates of various safety practices. Mean scores provided aggregate measures of safety performance levels, while standard deviations revealed important variations in safety implementation across different operational units.

The evaluation of safety perceptions (Objective 2) employed median values to identify central tendencies in employee attitudes, complemented by detailed percentage breakdowns of categorical responses. Graphical representations were generated to visually communicate key patterns and trends in the perception data, enhancing interpretability for diverse stakeholders. Analysis of compliance factors (Objective 3) utilized cross-tabulations to examine relationships between variables, with comparative mean scores highlighting differences among employee groups. Variability measures, including range and standard deviation, provided insights into the consistency of compliance behaviors across the workforce.

Reliability and Validity

Reliability and validity are essential factors in evaluating any research instrument. As Wood et al. (2014) explain, reliability refers to the consistency of an instrument—meaning it must produce stable and accurate measurements of a stable phenomenon. Validity, on the other hand, pertains to how well an instrument measures the specific concept it is intended to assess (Mayer, 2015).

Saunders (2012) emphasizes that reliability is a prerequisite for validity—an instrument must first demonstrate consistency before its accuracy can be verified. Once reliability is established, the instrument can then be evaluated to determine whether it truly measures what it claims to measure. To ensure validity, the researcher examined relevant literature to support the questionnaire's findings, with relevance determined by the study's research questions and the researcher's judgment (Saunders et al., 2019). Additionally, the questionnaire was reviewed and approved by the project supervisor before distribution to respondents. Reliability was assessed using Cronbach's alpha, with a threshold of 0.7 or higher indicating acceptable consistency. As shown in Table 2, the Cronbach's alpha values for the variables—monetary incentives, non-monetary incentives, and health workers' performance—ranged from 0.830 to 0.922, confirming that all constructs and measurement scales were reliable.

Table 1: Reliability Statistics

Variable	Cronbach's Alpha
Occupational Health and Safety Hazards	.922
Awareness of Occupational Health and Safety	.830
Compliance with Occupational Health and Safety	.914

Source: Field survey (2024)

Ethical issues

The study adhered to key ethical principles throughout the research process. Prior to data collection, institutional protocols were followed by obtaining an introductory letter from the Department of Human Resource Management, School of Business. This letter, which outlined the study's

purpose, was presented to Golden Star's management to seek official permission for data collection from employees.

Participants were fully informed about the research objectives and encouraged to provide objective responses to the questionnaire items. To protect respondents' privacy, they were assured of anonymity and confidentiality in handling their information. These measures align with Rahi's (2017) assertion that ethical research must maintain scientific integrity, avoid bias, and ensure honest and comprehensive reporting of findings. The ethical framework ensured that the study complied with academic standards while respecting participants' rights and organizational protocols.

Chapter Summary

This study adopted a descriptive research design to examine occupational health and safety practices at Golden Star Wassa Limited. The investigation relied on primary data collected through structured questionnaires administered to randomly selected employees across various departments. This sampling approach ensured representation of staff who possessed relevant knowledge about the subject matter. However, the study presents certain limitations that should be acknowledged. First, its exclusive focus on Golden Star Wassa Limited employees may restrict the generalizability of findings to other mining operations or industries. Second, the potential for response bias exists, as some participants might provide less objective answers due to concerns about possible victimization, despite assurances of confidentiality.

These methodological constraints highlight the need for caution when interpreting and applying the study's results. While the findings offer valuable insights into occupational health and safety practices at the specific research

site, their broader applicability may require additional validation through studies conducted in different organizational contexts.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter systematically presents the research findings derived from the analysis of primary data using SPSS (Version 26.0) equipped with SPSS Process Macro. The study investigated the state of occupational health and safety (OHS) practices at Golden Star Wassa Limited, a mining operation in Ghana's Western Region. The results are organized according to the study's specific objectives, facilitating logical progression and clarity of interpretation.

The analyzed data are presented in tabular format, providing concise summaries that enhance comprehension while maintaining the integrity of the statistical outputs. These tables serve as the foundation for subsequent interpretation and discussion. Following the presentation of results, this section engages in critical discussion of the findings, comparing them with existing empirical studies to identify points of convergence or divergence in the scholarly discourse on occupational health and safety practices.

Demographic Information of Respondents

Table 2 presents the demographic profile of study participants using frequency distributions and percentages, enabling detailed comparative analysis. The gender distribution reveals a significant predominance of male respondents, accounting for 165 individuals (63.5% of the sample), compared to 95 female participants (36.5%). This gender composition reflects the male-dominated workforce structure characteristic of Golden Star Wassa Limited's operations.

The substantial gender disparity evident in the respondent pool (nearly a 2:1 ratio) presents important analytical implications for the study. This uneven distribution creates opportunities for examining potential variations in occupational health and safety perceptions and experiences based on gender differences. The demographic data serves as a crucial reference point for interpreting subsequent findings, particularly in assessing whether and how gender factors may influence safety practices and outcomes within the mining environment.

The marked gender imbalance also raises important considerations for human resource management and gender equity policies in the extractive industry, suggesting potential areas for organizational attention regarding workforce diversity and inclusion strategies. These demographic characteristics provide essential context for understanding the broader findings of the study and their practical applications.

Table 2: Demographic information of respondents

No	Variables	Options	Frequency	Perception
1	Gender	Male	165	63.5%
		Female	95	36.5%
		Total	260	100%
2	Age range	Below 30 years	36	13.8%
		30-40 years	93	35.7%
		41-50 years	83	31.9%
		51-60 years	33	12.6%
		61years and above	15	5.7%
		Total	260	100%
3	Work experience	less than 5years	41	15.7%
		5-10years	91	35.0%
		11-15years	73	28.0%

		16-20years	35	13.4%
		21years and above	20	7.6%
		Total	260	100%
4	Highest level of education	Secondary	45	17.3%
		Diploma	72	27.6%
		1st Degree	98	37.6%
		Post Graduate	45	17.3%
		Total	260	100%

Source: Field survey (2024)

The study revealed a predominance of younger to middle-aged workers in the organization's workforce structure. The largest age cohort consisted of 93 respondents (35.7%) falling within the 30-40 years range. This was closely followed by 83 participants (31.9%) in the 41-50 years category. Younger employees (below 30 years) and older workers (51-60 years) each represented smaller but comparable proportions at 13.6% and 12.6% respectively. The smallest age group comprised 15 respondents (5.7%) aged 61 years and above. These findings collectively indicate that Golden Star Wassa Limited maintains a relatively youthful workforce, with nearly 70% of employees being between 30-50 years old.

The educational background of respondents demonstrated significant variation across qualification levels. Secondary education holders accounted for 45 participants (17.3%), while 72 respondents (27.6%) possessed diploma qualifications. First degree holders formed the largest educational cohort with 98 individuals (37.6%), matched numerically by second degree holders who also represented 17.3% (45 respondents) of the sample. This distribution suggests that the workforce is predominantly composed of professionally

qualified personnel, with over 80% holding post-secondary qualifications (diploma or degree). The balanced representation across educational levels provides a robust foundation for examining potential correlations between educational attainment and occupational health safety awareness or practices within the mining environment.

Examining the various OHS hazards faced by employees of Golden Star Wassa Limited

The study's initial research objective sought to systematically identify and analyze the various occupational health and safety hazards encountered by employees at Golden Star Wassa Limited. This investigation was structured around six distinct hazard domains, each carefully operationalized through multiple measurement items. Participants provided their assessments using a standardized five-point Likert scale, where numerical values carried specific interpretive meaning: a rating of 1 signified complete disagreement with the presence of a particular hazard, while a rating of 5 indicated strong agreement regarding its existence in the workplace environment.

The analytical approach employed factor analysis as the primary statistical method for dimension reduction and construct validation. Prior to conducting the factor extraction, two critical preliminary tests were performed to verify the appropriateness of this analytical technique. Bartlett's Test of Sphericity was conducted to confirm the presence of significant correlations among the measured variables, with results showing statistical significance at the $p < 0.05$ level. Complementing this, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated to ensure the data's suitability for factor analysis, with obtained values exceeding the recommended threshold of

0.60. These essential preliminary results are comprehensively presented in Table 3 of the study's findings.

The factor extraction process adhered to established psychometric standards to ensure methodological rigor. Only factors demonstrating Eigenvalues of 1 or greater were retained for further analysis, following the criterion established by Malhotra and Birks (2006). Additionally, the analysis incorporated a minimum factor loading threshold of 0.50, as recommended by Hair and colleagues (2010), to ensure adequate representation of variables within their respective factors. The reliability of each extracted factor was confirmed through Cronbach's alpha coefficients, with all retained factors meeting or exceeding the 0.60 threshold suggested by Nunnally (1978).

The interpretation of results incorporated both central tendency and variability measures. Mean scores served as the primary indicator of hazard prevalence, with values below 3.00 interpreted as reflecting general disagreement about the presence of specific hazards, while scores of 3.00 or higher indicated consensus about their existence. Standard deviation values provided important contextual information about the degree of consensus or variation in employee perceptions across the various hazard dimensions.

The complete analytical outputs, including detailed results from the KMO and Bartlett's tests, along with the full factor analysis of occupational health and safety hazards, are systematically presented in Tables 3 and 4. This presentation format allows for clear interpretation of both the dimensional structure of workplace hazards and the relative strength of employee perceptions regarding each identified hazard category. The methodological rigor applied in this analytical phase ensures that the identified hazard

dimensions represent statistically robust constructs that accurately reflect the safety challenges faced by employees in their work environment at Golden Star Wassa Limited.

Table 3: KOM and Bartlett's Test for OHS hazards faced by employees

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.620
Bartlett's Test of Sphericity	Approx. Chi-Square	2385.597
	Df	259
	Sig.	.000

Source: Field survey (2024)

According to Table 3, the Kaiser-Mayer-Olklin Test (KOM) which measures sampling adequacy indicated that the results were acceptable. According to Sekkaran (2015), the closer the reliability coefficient to 1.00, the more acceptable is the construct measure. In general reliabilities less than 0.60 are considered poor, and those in the range of over 8.00 are considered good and acceptable. In this study, a KMO measure of .620 exceeded the minimum non-acceptable requirement of below 6.00.

Also, the Bartlett's Test of Sphericity which relates to the significance of the study and thereby shows the validity and suitability of the responses collected to the problem being addressed through the study was measured. For Factor Analysis to be recommended suitable, the Bartlett's Test of Sphericity must be less than 0.05. As such a factor analysis is recommendable since the Bartlett's Test of Sphericity is 0.000.

Table 4: Descriptive statistics and Factor loading

Factor	Constructs	Mean	SD	% of agreement	Cronbach Alpha
1	**Safety Hazards**				
	Working from Heights	3.4721	1.3104	67	
	Unguarded Machinery	3.8342	0.9587	72	
	Moving Machinery Parts	3.1238	1.4213	59	
	Overall scores	3.4767	1.2301		0.81
2	**Biological Hazards:**				
	Malaria	3.3125	1.3421	62	
	Dengue Fever	3.0548	1.3789	58	
	Overall scores	3.1836	1.3605		0.72
3	**Physical Hazards**				
	Noise	3.2206	1.0946	65	
	Heat And Humidity	3.5074	1.1549	64	
	Poorly Maintained Vehicles	3.2206	1.1633	63	
	Overall scores	3.3162	1.1376		0.77
4	**Ergonomic Hazards**				
	Frequent Lifting	2.3235	1.1475	44	
	Broken Ground	3.1544	1.1462	63	
	Sleep Deficits	3.2500	1.1138	64	
	Overall scores	2.9093	1.1358		.76
5	**Chemical Hazards**				
	Coal Dust	2.7485	1.1923	48	
	Excessive use of Lead	2.8015	1.0924	49	
	Excessive use of Platinum	2.5779	1.1462	46	

	Excessive use of Cobalt	2.5956	1.1737	47	
	Overall scores	2.6808	1.1511		.074
6	**Psychological Hazards**				
	Drug Abuse	3.5176	1.1412	63	
	Alcohol Abuse	3.6235	1.2103	66	
	Post-Traumatic Stress Disorders	3.8015	1.2638	68	
	Overall scores	3.6475	1.2051		.770

Source: Field survey (2024)

On the basis of the feedback form the analysis, some of the items were deleted and not used because their reliability falls short of the required and accepted Cronbach Alpha of .70. Apart from that, as presented in Table 4, respondents relatively agreed with five constructs out of the six used in eliciting their view on Occupational Health and Safety hazards faced by employees of Golden Star Wassa Limited (the overall means of the five constructs were greater than 3.0). Meaning, staffs face safety hazards in the form of working from Heights, unguarded machine and moving Machinery Parts (Overall Mean = 3.4767and Std. Dev. = 1.2301). Also, the respondents indicated that face some form of biological hazards constituting malaria and fever (Overall Mean = 3.1836 and Std Dev = 1.3605).

On physical hazards, the respondents revealed that they are faced with noise, heat and humidity, and poorly maintained vehicles with overall Mean = 3.3162 and Std Dev = 1.1376. Further, it was noticed that respondents encounter ergonomic hazard in the form of broken ground and sleep deficits. However, they asserted they do not engage in frequent lifting (overall mean = 2.9093 and Std Dev = 1.1358). Again, it was uncovered that drug abuse, alcohol abuse and post-traumatic stress disorder are the psychological hazards the respondents

face in their work engagement with overall mean = 3.6475 and standard deviation = 1.2051. With respect to chemical hazards, the respondent dissented on excessive use of coal dust, Lead, Platinum and Cobalt (overall Mean = 2.6808 and Std Dev = 1.1511).

The findings correspond to the assertion of Saleh and Cummings (2011) who accentuated that safety hazards are the most common and will be present in most workplaces at one time or another that includes working from heights, including ladders, scaffolds, roofs, or any raised work area; unguarded machinery and moving machinery parts. The results is also consistent with Gallup and Sachs (2001) who also stated that risk of tropical diseases such as malaria and dengue fever is substantial at some remote mining locations. It is in line with Frank, Bise and Michael (2023) who pointed that noise is almost ubiquitous in mining and is generated by drilling, blasting, cutting, materials handling, ventilation, crushing, conveying and ore processing.

The findings is again consistent with Niosh, (2020) saying that although mining has become increasingly mechanized, there is still a substantial amount of manual handling and cumulative trauma disorders continue to constitute the largest category of occupational disease in mining.it is also unswerving with Roscoe, Steenland, Halperin, Beaumont and Waxweiler (2000) who proclaimed that broken ground is often encountered and can cause ankle and knee injuries. Further, the findings is line with Amponsah-Tawiah, Leka, Jain, Hollis and Cox (2014) assertion about psychological hazards that drug and alcohol abuse has been a difficult issue to deal with in mining. The findings however, is in contrast with Halldin, Reed, Joy, Colinet, Rider, Petsonk and Laney (2015) that coal dust has also been a serious chemical hazard in mining, causing coal workers'

pneumoconiosis or 'black lung' and chronic obstructive pulmonary disease. It is also in distinction with Roels, Lauwerys, Konings, Buchet, Bernard, Green and Chettle (1994) that several other metal ores, including those of lead, cadmium, manganese, platinum and cobalt, present health hazards.

Level of awareness of OHS requirements among Golden Star Wassa Limited workers

The study's second objective focused on evaluating employees' awareness of occupational health and safety (OHS) requirements at Golden Star Wassa Limited. This examination was structured around nine carefully formulated items designed to measure various aspects of safety awareness. Respondents indicated their level of agreement with each statement using a five-point Likert scale, where a rating of 1 represented complete disagreement and 5 indicated strong agreement with the presented awareness items.

To identify underlying dimensions within the awareness construct, the analysis employed factor analysis as the primary statistical technique. This approach followed established methodological protocols, beginning with essential preliminary tests to verify the appropriateness of the analytical method. The Bartlett's Test of Sphericity confirmed statistically significant correlations among the variables ($p < 0.05$), while the Kaiser-Meyer-Olkin (KMO) measure demonstrated adequate sampling suitability with values exceeding the recommended 0.60 threshold. These critical diagnostic results are comprehensively documented in Table 5.

The factor extraction process maintained rigorous psychometric standards to ensure robust findings. The analysis incorporated only those factors that met three key criteria: Eigenvalues exceeding 1.0, ensuring meaningful

variance explanation; Factor loadings surpassing the 0.50 threshold (Hair et al., 2010) for adequate variable representation; Reliability coefficients meeting or exceeding the 0.60 benchmark (Nunnally, 1978) for internal consistency.

The interpretation framework utilized both central tendency and dispersion measures to provide nuanced understanding of the results. Mean scores served as the primary indicator of awareness levels, with values below 3.00 suggesting limited awareness and scores of 3.00 or higher reflecting adequate understanding of OHS requirements. Standard deviation values complemented these findings by revealing the degree of consensus among respondents regarding each awareness dimension.

Table 5: KOM and Bartlett's Test for Level of Awareness

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.710
Bartlett's Test of Sphericity	Approx. Chi-Square	25985.597
	Df	259
	Sig.	.000

Source: Field survey (2024)

According to Table 5, the Kaiser-Mayer-Olklin Test (KOM) indicated that the results were acceptable. According to Sekkaran (2005), the closer the reliability coefficient to 1.00, the more acceptable is the construct measure. In general reliabilities less than 0.60 are considered poor, and those in the range of over 8.00 are considered good and acceptable. In this study, a KMO measure of .710 exceeded the minimum non-acceptable requirement of below 6.00.

Also, the Bartlett's Test of Sphericity which relates to the significance of the study and thereby shows the validity and suitability of the responses collected to the problem being addressed through the study was measured. For

Factor Analysis to be recommended suitable, the Bartlett's Test of Sphericity must be less than 0.05. As such a factor analysis is recommendable since the Bartlett's Test of Sphericity is 0.000.

Table 6: Factor Analysis for Level of Awareness

Factor	Statements	Mean	Std Dev	% of agreement	Cronbach Alpha
1	I have sufficient knowledge of the Occupational health and safety policies	3.8015	1.2638	79	.751
2	I have a copy of the Occupational Health Safety policies on the employer's premises	2.7485	1.0461	47	.716
3	I know my rights as an employee when it comes to health and safety issues	3.5779	1.1153	74	.721
4	I am provided with the necessary skills on safely.	3.6353	1.3178	77	.742
5	I usually follow safety procedures at work	3.5632	1.1412	73	.766
6	I have a health and safety representative in my workplace	2.5176	1.2356	42	.739
7	I involved in the planning of health and safety	2.6235	1.2103	45	7.35
8	Safety meetings are held regularly with employees	2.5808	1.0874	44	.745
9	Safety awareness campaigns are held on a regular basis	2.8254	0.9458	48	.718

Source: Field survey (2024)

On the basis of the response from the analysis, none of the items were deleted and were all used because their reliability meets the required and accepted Cronbach Alpha of .70. Also, as presented in Table 6, respondents agreed with four items out of the nine used in eliciting their view on level of awareness of OHS requirements of Golden Star Wassa Limited (the overall means of the four items were greater than 3.0). With regards to sufficient knowledge of the Occupational health and safety policies the respondents agreed to that effect (Mean = 3.8015and Std. Dev. = 1.2638). Also, the respondents indicated that they know their rights as an employee when it comes to health and safety issues (Mean = 3.5779and Std Dev = 1.1153).

With respect to respondents being provided with the necessary skills on safely measures, they revealed that they are provided with such skills (Mean = 3.6353 and Std Dev = 1.3178). Further, the respondents proclaimed that they usually follow safety procedures at work (Mean = 3.5632 and Std Dev = 1.1412). The findings is consistent with Kim and Oh (2010) who mentioned that workers are likely to be aware of the dangers involved in their work and try to avoid it. It si also consistent with the Commission on Health and Safety and Workers' Compensation (CHSWC, 2010) that workers have the right which when they applied and respected by supervisors should increase their awareness of workplace safety.

However, according to Table 6, the respondents dissented that they have a copy of the Occupational Health Safety Act on the employer's premises (Mean = 2.7485 and standard deviation = 1.0461). Also, the respondent opposed that have a health and safety representative in my workplace (Mean = 2.5176 and Std Dev = 1.2356). With regards to safety meetings, the respondents revealed

that there is no regularly meetings with employees (Mean = 2.5808 and standard deviation = 1.0874). Again, the respondent asserted that they are not involved in the planning of health and safety (Mean = 2.6235 and standard deviation = 1.2103). Lastly, the respondents revealed that they do not have safety awareness campaigns on a regular basis (Mean = 2.8254and standard deviation = 0.9458).

The findings are in contrast with Ahmed and Newson-Smith (2010) who emphasized that though cost is important, safety awareness campaigns are held on a regular basis. It is also in disparity to Rogers and Ostendorf (2001) assertion that organisations must have have a copy of the Occupational Health Safety Act on the employer's premises to aid awareness of hazards at the workplace. The results presented in Table 6 is also in distinction with the assertion of According to Mills (2016) that in regulating health and safety in the mining industries, organisations should have a health and safety representative in my workplace.

Level of compliance with OHS practices by employees Golden Star Wassa Limited workers

The third research objective focused on examining the degree to which employees at Golden Star Wassa Limited adhere to established occupational health and safety (OHS) protocols. This critical assessment was structured around six key compliance indicators that collectively represent the essential aspects of workplace safety practices. Employees provided their self-reported compliance levels through a carefully designed five-point Likert scale, where responses ranged from strong disagreement (1), indicating non-compliance, to strong agreement (5), reflecting full adherence to safety protocols.

Prior to conducting the primary analysis, the research team performed essential diagnostic tests to validate the appropriateness of the factor analysis

approach. Bartlett's Test of Sphericity yielded statistically significant results ($p < 0.001$), confirming sufficient correlation among variables to proceed with dimension reduction. The Kaiser-Meyer-Olkin measure of sampling adequacy exceeded the recommended threshold of 0.60, further supporting the factorability of the compliance data. These preliminary validation tests, comprehensively documented in Table 7, established a solid foundation for subsequent analysis.

The factor extraction process adhered to stringent methodological standards to ensure robust and meaningful results. Only factors with eigenvalues greater than 1.0 were retained, following the Kaiser criterion for meaningful variance explanation. The analysis incorporated variables demonstrating factor loadings of at least 0.50, as recommended by Hair and colleagues, ensuring adequate representation of each item within its respective factor. All retained factors exhibited strong internal consistency, with reliability coefficients meeting or surpassing the 0.60 threshold established by Nunnally.

The interpretation of compliance levels employed a dual approach, examining both central tendency and response variability. Mean scores served as the primary indicator, with values below 3.0 suggesting areas requiring improvement in compliance and scores of 3.0 or higher reflecting satisfactory adherence to safety practices. Standard deviation values provided important contextual information about the consistency of compliance behaviors across different employee groups and operational contexts.

The complete analytical results, systematically presented in Tables 7 and 8, reveal the underlying dimensional structure of OHS compliance at Golden Star Wassa Limited. These findings offer valuable insights into both the

strengths and weaknesses of current safety practice implementation, highlighting specific areas where compliance is strongest and identifying opportunities for targeted intervention.

Table 7: KMO and Bartlett's Test for level of compliance with OHS

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.726
Bartlett's Test of Sphericity	Approx. Chi-Square	354817.3218
	Df	259
	Sig.	.001

Source: Field survey (2024)

According to Table 7, the Kaiser-Mayer-Olklin Test (KOM) specified that the results were acceptable. Also, sacording to Sekkaran (2005), the closer the reliability coefficient to 1.00, the more acceptable is the construct measure. In general reliabilities less than 0.60 are considered poor, and those in the range of over 8.00 are considered good and acceptable. In this study, a KMO measure of .726 exceeded the minimum non-acceptable requirement of below 6.00.

Also, the Bartlett's Test of Sphericity which relates to the significance of the study and thereby shows the validity and suitability of the responses collected to the problem being addressed through the study was measured. For Factor Analysis to be recommended suitable, the Bartlett's Test of Sphericity must be less than 0.05. As such a factor analysis is recommendable since the Bartlett's Test of Sphericity is 0.001.

Table 8: Descriptive statistics and Factor loading for level of compliance with OHS

Factor	Statements	Mean	Std Dev	% of agreement	Cronbach Alpha
1	I am provided with appropriate materials and equipment for work	3.9015	0.9638	87	.764
2	My employer takes practicable steps to ensure I am safe during the course of work	3.4885	0.9567	77	.758
3	I exercise due care in the execution of assigned my work	3.7579	0.9553	74	.739
4	I obey lawful instruction regarding the execution of work	3.7635	0.9787	77	.755
5	I take all reasonable care for the safety and health of fellow workers	3.8642	0.9924	86	.792
6	There are punitive measures to ensure compliance in the company	3.1536	1.4296	76	.718

Source: Field survey (2024)

Drawing from Table 8, all the items had a reliability coefficient greater than the acceptable reliability coefficient of .70. Therefore, all factors measuring the level of compliance were maintained (None was deleted). As

shown in Table 8, respondents agreed with all the six (6) items used in drawing out responses on level of compliance to OHS requirements of Golden Star Wassa Limited. Meaning, respondents to large extent provided with appropriate materials and equipment for work (Mean = 3.9015 and Std. Dev. = 0.9638). Also, the respondents indicated that in complying the health and safety issues, their employer takes practicable steps to ensure they are safe during the course of work (Mean = 3.4885 and Std Dev = 0.9567).

Further, the respondents indicated that they exercise due care in the execution of assigned their work (Mean = 3.7579 and Std Dev = 0.9553). To ensure compliance, the respondents proclaimed that they obey lawful instruction given to them regarding the execution of work (Mean = 3.7635 and Std Dev = 0.9787). In addition, the respondents indicated that they take all reasonable care for the safety and health of fellow workers (Mean = 3.8642 and Std Dev = 0.9924). There are punitive measures to ensure compliance in the company (Mean = 3.1536 and Std Dev = 1.4296).

The findings are consistent with Burke, Clarke and Cooper (2011) assertion that institutions involved in OHS issues consider punitive measures as more likely to ensure compliance. It is also reflective of what Robson, Clarke, Cullen, Bielecky, Severin, Bigelow & Mahood (2017) postulated that in complying with occupational health and safety measures, employees need to obey lawful instruction regarding the execution of their work. Again, the results confirm Champoux and Brun (2023) saying that employer must takes practicable steps to ensure that employees are safe during the course of work. Further, the finding is in line with Matsuura (2016) proclamation that

organisations should provide with appropriate materials and equipment for work.

Chapter Summary

The study revealed that staff face safety, biological, physical, ergonomic, and psychological hazards. The study also discovered that the staff have sufficient knowledge of the Occupational health and safety policies and also, provided with the necessary skills on safely. Conversely, they do not have safety meetings are held regularly with employers. It was found that safety awareness campaigns are not held on a regular basis. The study also discovered that there are punitive measures as well as reasonable care for the safety and health of fellow workers to ensure compliance in the company. The study further discovered that the staff obey lawful instruction regarding the execution of work and exercise due care in the execution of assigned work.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter synthesizes the key findings from the study examining occupational health and safety (OHS) practices at Golden Star Wassa Limited. The research revealed three critical dimensions of workplace safety: identified hazards, employee awareness levels, and compliance practices. Analysis of hazard perception demonstrated that major risk categories were prevalent, with [specific hazard] emerging as the most significant concern. Employee awareness levels showed a satisfactory understanding of core OHS requirements, though gaps were identified in [specific knowledge area]. Compliance patterns indicated strong adherence to health and safety practices.

Summary of Findings

The primary purpose of this study was to explore the level of occupational health and safety (OHS) practices in Golden Star Wassa Limited, in the Western region of Ghana. The secondary purposes were to (1) examine the various OHS hazards faced by employees of Golden Star Wassa Limited, workers, (2) explore the level of awareness of OHS requirement among employees of Golden Star Wassa Limited workers and (3) assess the level of compliance with OHS practices by employees Golden Star Wassa Limited workers. Out of 880, 275 respondents were randomly sampled for the study. Questionnaires were employed as instrument for collecting data for the study. The study used SPSS version 22.0 to analyse the collected data. The researcher personally collected the data required for the study. Both descriptive, Kaiser-Meyer-Olkin Measure of Sampling Adequacy, Bartlett's Test of Sphericity and

factor analysis were used to analyse the data to address the stated objectives of the study.

With respect to the first research objective examine the various OHS hazards faced by employees of Golden Star Wassa Limited, workers. The following key findings emerged.

The staff affirmed that the staff face safety, biological, physical, ergonomic, and psychological hazards. However, the staff asserted that they are privy to chemical hazards such as coal dust, excessive use of Lead, excessive use of platinum and excessive use of Cobalt.

The second research objective sought to explore the level of awareness of OHS requirement among employees of Golden Star Wassa Limited. The following are the key findings.

The study discovered that the staff have sufficient knowledge of the Occupational health and safety policies and also, provided with the necessary skills on safely. Conversely, the study revealed that staff awareness to OHS hazards, they do not have safety meetings are held regularly with employers. It was also found that safety awareness campaigns are not held on a regular basis.

The third research objective sought to assess the level of compliance with OHS practices by employees Golden Star Wassa Limited. The following are key findings.

The study discovered that there are punitive measures as well as reasonable care for the safety and health of fellow workers to ensure compliance in the company. The study further discovered that the staff obey lawful instruction regarding the execution of work and exercise due care in the execution of assigned work

Conclusions

Occupational health and safety constitutes an inalienable human right that demands comprehensive legal protections, social awareness, and moral accountability within Ghana's national development framework. While OHS research remains an emerging field in the country, this developmental stage cannot justify compromising workers' fundamental rights to safe working conditions through either institutional neglect or societal indifference. The growing body of OHS studies must maintain a transformative agenda focused on systematic hazard elimination across all economic sectors.

Although occupational health and safety research attempts were made, little interventions were made the curb hazards at the workplace. There were occupational hazards faced by staff of Golden Star and hence management should find ways to curb the situation. There must be a renewed attention to action-oriented OHS researches. These would eventually lead to the mainstreaming of occupational health and safety practices.

Recommendations

Based on the findings of this study, this study recommends that Government of Ghana in collaboration with other organizations should make funds available for more training programs on occupational health and safety measures with regards to mining be organized for workers at all levels. This will help to develop and improve on contextual intervention measures to address and solve the prevailing health and safety problems on mining. Again, the OHS Bill should be passed by Government to provide a consolidated occupational health and safety legal framework.

It is also recommended that, mining operators and the management of Golden Star Wassa Ltd should strengthen the compliance to health and safety requirement to help protect against occupational hazards.

Suggestion for Further Research

This study was limited to occupational health and safety (OHS) practices in Golden Star Wassa Limited, in the Western region as such further research can be extended to cover other mining institutions outside the region or Ghana as a whole. A study that employs both qualitative and quantitative analysis of how the health system addresses occupational health hazards and problems on mining can be done to extend literature on OHS practices in Ghana. Another study can explore hindrances and difficulties in addressing health and safety delivery by the health system through qualitative approach.

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QUESTIONNAIRE

UNIVERSITY OF CAPE COAST

COLLEGE OF HUMANITIES AND LEGAL STUDIES

SCHOOL OF BUSINESS

DEPARTMENT OF HUMAN RESOURCE MANAGEMENT

Dear Sir/Madam,

I am a final year Post Graduate Student of the University of Cape Coast, pursuing Master of Business Administration (HRM). As a requirement, I am carrying out a research on the topic: Occupational Health and Safety (OHS) practices in Golden Star Wassa Limited, in the Western region of Ghana. I would be grateful if you could fill the questionnaire for the study. Decision to participate or not is entirely yours. Information provided would be treated as strictly confidential

Section A: Demographic Data

(Choose the most suitable answer and tick in the box below)

1. Age: Below 30 ☐ 30-40 ☐ 41-50 ☐ 51-60 ☐ 61 and above ☐
2. Gender: Male ☐ Female ☐
3. Number of years at Golden Star Wassa Ltd less than 5years ☐ 5-10years ☐ 11-15years ☐ 16-20years ☐ 21years and above ☐
4. Highest level of education: Secondary ☐ Diploma ☐ University ☐ Post Graduate ☐

Section B: Occupational Health and Safety Hazards Faced by Employees

To what extent do you agree with the following with regards to hazard in Golden Star Wassa Limited. The responses will be measured numerically such that one (1) represents the least agreement to the issues while five (5) represents the highest level to the issues.

Statements	**1**	**2**	**3**	**4**	**5**
Safety Hazards					
Cables Running across the Floor					
Working from Heights					
Unguarded Machinery					
Improper Wiring					
Moving Machinery Parts					
Biological Hazards:					
Malaria					
Dengue Fever					
Leptospirosis					
Ankylostomiasis					
Physical Hazards					
Radiation					
Noise					
Heat And Humidity					
Whole Body Vibration					
Solar Ultraviolet Exposures					
Poorly Maintained Roads					
Poorly Maintained Vehicles					
Ergonomic Hazards					
Improperly Adjusted Workstations					
Improperly Adjusted Chairs					
Frequent Lifting					

Broken Ground					
Sleep Deficits					
Chemical Hazards					
Prolonged Exposure to Crystalline Silica					
Coal Dust					
Excessive use of Lead					
Excessive use of Cadmium					
Excessive use of Manganese,					
Excessive use of Platinum					
Excessive use of Cobalt					
Methane Gas Explosions					
Psychological Hazards					
Expatriate Placements					
Drug Abuse					
Alcohol Abuse					
Post-Traumatic Stress Disorders					

Section C: Level of Awareness of Occupational Health and Safety Requirement among Employees

To what extent do you agree with the following as they contribute to awareness of occupational health and Safety practices in Golden Star Wassa Limited? The responses will be measured numerically such that one (1) represents the least agreement to the issues while five (5) represents the highest agreeing to the issues.

Statements	**1**	**2**	**3**	**4**	**5**
I have sufficient knowledge of the Occupational health and safety policies					
I have a copy of the Occupational Health and Safety policies on the employer's premises					

I know my rights as an employee when it comes to health and safety issues					
I am provided with the necessary skills on safely.					
I usually follow safety procedures at work					
I have a health and safety representative in my workplace					
I involved in the planning of health and safety					
Safety meetings are held regularly with employees					
Safety awareness campaigns are held on a regular basis					

Section D: Level of Compliance with Occupational Health and Safety

OHS practices

To what extent do you agree with the following as they contribute to compliance in Golden Star Wassa Limited. The responses will be measured numerically such that one (1) represents the least agreement to the issues while five (5) represents the highest level to the issues

Statements	1	2	3	4	5
I am provided with appropriate materials and equipment for work					
My employer takes practicable steps to ensure I am safe during the course of work					
I exercise due care in the execution of assigned my work					
I obey lawful instruction regarding the execution of work					

I take all reasonable care for the safety and health of fellow workers					
There are punitive measures to ensure compliance in the company					

THANK YOU VERY MUCH!!!