UNIVERSITY OF GHANA, LEGON

IMPROVING OCCUPATIONAL SAFETY OF DOCK WORKERS
AT THE PORT OF TEMA

BY

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DECEMBER 2014
DECLARATION

Candidate’s Declaration

"I hereby declare that this dissertation, with the exception of quotations and references contained in published works which have all been duly acknowledged, is entirely my own work, and it has not been submitted for another degree elsewhere."

JOSEPH ATSU ADAKLUMEGAH

(CANDIDATE)

Supervisor’s Declaration

"This dissertation has been read and approved as meeting the requirements of the School of Research and Graduate Studies, University of Ghana."

MR. ALFRED OFORI ABEBORESE

(SUPERVISOR)
DEDICATION

I dedicate this thesis to my family; my parent, Mr and Mrs Adaklumegah, and my siblings, Ivy, Josephine and Patrick. I thank you for your love, guidance and support throughout my education and life.
ACKNOWLEDGEMENT

I am most thankful to the Almighty Lord, who has guided me through my educational journey. Indeed, all praise and honour are to your great name.

I am indebted to my supervisor, Mr. Alfred Ofori Abebrese, for his advice and the immense guidance he gave me during the execution of this study.

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I cannot fail to also say a big thank you to my friends, especially Kevin Mensah, Solomon Boye Laryea and Ruby Azaletey for their immense contributions towards the success of this thesis.
ABSTRACT

Occupational Health and Safety (OHS) systems and their management are very important issues in today's market place. Many researches have been done to indicate that it has direct impact on productivity and performance but very little emphasis is placed on it in the Ghanaian market. The Tema Port is an important entry and exit point in this country and its operations involves dealing with large metal containers and machine equipment. This requires that safety measures are properly and appropriately put in place for the workers at the port, especially the dock workers – who are mostly casual in nature. Therefore, the purpose of this study is to examine the Occupational Health and Safety Management Systems (OHSMS) of the Tema Port, how effective these have been and the impact the OHSMS has on the safety of the employees at work.

Using a convenience sampling method and drawing a sample of 150, a questionnaire was designed to solicit information from 97 dockworkers as respondents at the Tema Port.

The results showed that the nature of the Occupational Health and Safety Management system put in place at the Tema Port is poor because there is non compliance to health and safety issues by both management and employees of the organisation. OHSM systems at the port do not serve their intended purpose.

One of the important recommendation is for management to enforce the OHSM policies of the organisation in a more purposive manner, ensuring that both employees and the leadership are doing what is expected of them.
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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Health and safety are very important in the life of any human. It is a natural desire for man to want to live in an environment where he is assured of safety. This is confirmed by Abraham Maslow; Maslow (1946), in his theory of hierarchy of needs states that man will strive to be safe and live in a healthy state. Safety is necessary because environmental conditions are not always favourable to one's wellbeing. In the 21st century where most working adults spend at least a third of their lives in the working environment, workplace safety should be a priority of governments, employers and the employees themselves. If these stakeholders take safety and health for granted they may end up paying a huge price for it later on.

According to the World Health Organisation's *Health for All principles* and the International Labour Organisation (ILO) Conventions on Occupational Safety and Health (No. 155) and on Occupational Health Services (No. 161), every worker has the right of access to occupational health and safety services irrespective of the sector of the economy, size of the company, or type of assignment and occupation, (Kupatira, 2010). It is estimated that unsafe work conditions is one of the leading causes of death and disability among India's working population. Kupatira (2010) noted that these deaths are needless and are preventable.

Shipping is perhaps the most international of the world’s industries, serving more than 90% of global trade by carrying huge quantities of cargo cost effectively, cleanly and safely. The maritime industry fulfils a critical role in the world economy as a primary carrier of international trade and driver of global supply chains (Community Medicine Blog, 2011).
At the centre of all this movement of goods across the globe is the human resource at the ports. Port labour is one of the most valuable assets of the port community. This pool of trained personnel is a deep source of practical knowledge with vast experience in port operations. This source can be tapped to contribute to problem-solving expertise and innovation to add value to the goods and services of customers. Port labour, including crane and equipment operators, stevedores and harbour pilots, is one of the keys to success or failure in today’s competitive port and international trade environment. Too often port labour is blamed for a port’s failure to play an appropriate and productive role in port operations and its nation’s economic development. Overstaffing, outdated and inefficient work rules, poor skills and training, inflated pay scales, and unreliability are among the most prominently cited problems contributing to high costs and inefficient operations in many ports (World Bank, 2007).

The maritime workplace is identified as a high risk workplace and in many aspects differs from the conditions in other industries. Improved training, improved systems of work, improved safety awareness, and greater use of protective devices are needed to prevent fatal injuries (National Centre for Biotechnology Information, 2011).

The ILO Constitution sets forth the principle that workers should be protected from sickness, diseases and injury arising from their employment. Yet for millions of workers the reality is very different. Some two million people die every year from work related accidents and diseases. An estimated 160 million people suffer from work-related diseases, and there are an estimated 270 million fatal and non-fatal work related accidents per year. The suffering caused by such accidents and illnesses to workers and their families is incalculable. In economic terms, the ILO has estimated that 4% of the world’s annual GDP is lost as a consequence of occupational diseases and accidents (ILO, 2011).
Furthermore, according to the ILO, despite new and sophisticated innovations, port work is still considered an occupation with very high accident rates. Every port, with reference to its specific circumstances, needs to develop working practices that would safeguard the safety and health of port workers. The ILO code of practice, intended to replace both the second edition of the ILO Code of Practice on Safety and Health in Dock Work (1977) and the ILO Guide to Safety and Health in Dock Work (1976), provides valuable advice and assistance to all those charged with the management, operation, maintenance and development of ports and their safety (ILO, 2005).

Regulating the maritime industry in terms of occupational safety is a challenging task. Conducting day-to-day managerial tasks or regulatory surveillance thus poses major challenges as does the implementation of uniform regulatory standards across this global maritime industry.

The port of Tema currently employs a lot of dock workers, both in the GPHA and MPS terminals. The port area is also frequented by users such as shippers, ship agents, clearing and forwarding agents, customs officials, administrators and other general visitors. Keeping this in mind, it is extremely difficult to ignore the occupational safety aspect of this large skill force and how to coordinate a sustainable safety programme.

In the ILO code of practice, it states that as a general requirement, safety in ports is the responsibility of everyone who is directly or indirectly concerned with work in ports and needs to cooperate to develop safe systems of work and ensure that they are put into practice. (ILO, 2011)

In Ghana, even though there are no readily available statistics on these occupational hazards from industries and various workplaces, the reported cases in the news are alarming. For example, four bodies were reported to have been burnt to death and more than 25 people left
with various degrees of burns after a premix fuel tanker exploded at Axim. The fire broke out at a premix fuel filling depot at Brawire, a station community at Axim (Ghana Broadcasting Corporation, 2012). Similarly, workers of Western Steel And Forgings Limited in Tema who were responding to an order from a supervisor to top up a container with smelting metal were greeted with disaster as a result of an explosion at the Melting Furnace Plant. These situations create a lot of uncertainties in some working conditions as people leave their homes for work and never return home or at best others return with missing or scarred parts of their bodies.

The ports and harbours are not exceptional in these uncertainties. It is recorded that on the 25th of March 2010, an accumulation of oil caused a major fire outbreak at the Tema Port that took the lives of over twenty (20) persons at the Dry Dock and its surrounding areas. As part of the measures to avert any future disasters, the GPHA conducted a mock oil spill exercise at the Tema Harbour to test their disaster preparedness and response capabilities. The exercise involving the imaginary vessel MT Prampram, an oil tanker discharging crude oil led to a major explosion causing harm to a number of employees resulting in medical treatment and hospitalisation. Besides, in July this year, a recording clerk was crushed to death at the port by a 45-footer ritchstacker machine used in lifting containers. Other fatal accidents in the last five years include empty container handler accidents, gantry crane accidents, vessel burning, container truck falling down, and cargo truck accidents (Agbola, 2012).

A more recent international issue is when in May 2013, a cargo ship slammed into one of Italy’s busiest port. It was reported that at least seven people died after the container ship smashed into a control tower in the port in Genoa, with other people suffering severe injuries (FoxNews, 2013). These issues create the need for more attention to be given to the health and safety of the workers at the ports, including Tema Port.
1.2 STATEMENT OF PROBLEM

In spite of these accident statistics the code of ethics and the regulatory measure by the ILO, the Tema Port has been observed by Agbola (2012) to be deficient in safety measures put in place for port workers. This is especially the case for dock workers whose work exposes them to continual risks at the workplace.

Occupational health aims at the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; the prevention amongst workers of departures from good health caused by their working conditions; the protection of workers in their employment from risk resulting from factors adverse to health; the placing and maintenance of workers in an environment adapted to their physiological and psychological capabilities (Samra, 2009). The ultimate objective of occupational health is a healthy, safe and satisfactory work environment and a healthy, active and productive worker, free from both occupational and non- occupational diseases. The question of relevance in this regard is that; are those physiological and psychological needs of the workers in the Tema Port being achieved?

Safety measures employed in the port need to be improved by involving all stakeholders especially the workforce who uses the port facility on a daily basis. There needs to be a lot of awareness and periodic risk assessment conducted in order to close the identified gaps for continuous improvement. This needs to be done by adopting a sustainable management system approach known as The Occupational Health and Safety Management System, which establishes a framework for:

- Consideration of, and compliance with, relevant legislative, regulatory and statutory obligations;
• Hazard identification, risk assessment and risk control requirements for routine and non-routine activities;
• Reduction of workplace injury and illness;
• Accident and incident prevention initiatives; and
• Training, awareness, communication and consultation requirements.

This approach needs to be done in accordance with internationally acceptable standards like OHSAS 18001: 2007 Safety Management System Standards.

Furthermore, safety in ports is the responsibility of everyone who is directly or indirectly concerned with work in ports and needs to cooperate to develop safe systems of work and ensure that they are put into practice. The introduction of new ideas and concepts in cargo handling demands that special attention be paid to safety requirements in ports, and the Tema Port is no exception.

1.3 PURPOSE OF THE STUDY

The purpose of this study is to examine the Occupational Health and Safety Management System of the Tema Port, how effective they have been and their impact on the safety of the employee at work.

1.3 OBJECTIVE OF THE STUDY

The objectives of the study are to;

• Examine the nature of the Occupational Health and Safety Management System (OHSMS) at the Tema Port.
• Evaluate the effectiveness of the OHSMS.
The impact the OHSMS has on the performance and work attitudes of employees at the Tema Port.

1.4 RESEARCH QUESTIONS

- What is the nature of the Occupational Health and Safety Management System at the Tema Port?
- How effective is the OHSMS that has been put in place?
- What is the impact of the OHSMS on performance and work attitudes of the employees?

1.5 SCOPE OF THE STUDY

The scope of the research was the main port area of Tema where dock workers operate on a daily basis. It is important to note that a wide range of different cargo handling activity is carried out within the port of Tema and this research covered these activities of workers within the GPHA and MPS terminals. The research however did not look at the dock operations in the Inland Container Depots (ICDs) which are outside the main port.

1.6 SIGNIFICANCE OF THE STUDY

This research will serve as a useful material in informing the safety and health status of the Tema Port. Even though an Occupational Health and Safety Management System might have been put in place, management may not know how effective the system is or has been.

It will also serve as a guide in helping management to implement and/or strengthen safety measure that were not present or have been relaxed.
The findings of this research work will inform workers or workers’ unions, especially at the Tema Port, on the lapses that may exist in the safety and health measures that are being put in place for them. This will give them the opportunity to respond to and demand safety at their specific workplaces.

The members of the legislature and policy makers need to make informed decisions for the good of the industry based on the available research findings when coming out with laws and formulating policies. Sometimes in Ghana, during the development of the legislative instruments for the operation of an institution or sector, issues such as safety needs of the employees are left out and are only visited when a disaster occurs. This research can serve that rightful purpose of providing the needed information for proper decisions. Institutions that are supposed to perform supervisory roles to ensure the implementation of safety and health management laws would be brought to the fore.

Finally, this research will contribute to other researches that may already be available on safety and health management in the ports and harbour industry. It will also serve as a useful foundation for the development of researches or further research in the industry.

1.7 ORGANIZATION OF THE STUDY

The research report comprises five (5) chapters, these are as follows:

Chapter one was about the introduction of the work; giving a brief background to the study, stating the problem statement, objectives of the study and research questions. It further states the significance of the study and the organization of the rest of the work. In Chapter two the review of literature is developed based on the research objectives. It explains health and safety in the occupational setting and factors that affect it. It also includes the review of other
literature as to what pertains in other countries and the impact of workplace safety worker performance.

Chapter three is the research methodology which encompasses the research design, population targeted, sample and sampling techniques, data collection methods, and the statistical tools used in the analysis. Chapter four gives a summary of results, discussion and statistical analysis conducted on the data collected from the field is reported in this chapter. Frequency tables and charts are generated to illustrate statements and observations in the analysis. Finally, Chapter five presents the summary of the findings and conclusions from the study especially the statistical analysis as well as the appropriate recommendations, if any.
CHAPTER TWO
LITERATURE REVIEW

2.1 INTRODUCTION

The literature review explores various forms of works that have been done by other individuals and organisations in this area of study. These include books, journals, research articles and websites. The literature review explains the concept of occupational health and safety, how it is taken in the Ghanaian context, ports administration and work of dockworkers at the ports.

2.2 THE CONCEPT OF OCCUPATIONAL HEALTH AND SAFETY

As a multidisciplinary subject, occupational health and safety addresses all the risk factors of the working environments namely physical, chemical, biological, psychological and ergonomical risks. Leka (2003) described occupational health and safety as a multidisciplinary concept touching on issues relating to subjects such as medicine, law, technology, economics and psychology. Taking into consideration such multidisciplinary subject, seems to be the main reason for different attitudes of governments, employers, workers' unions and other parties involved in workplace health and safety, (Leka, 2003). Unfortunately, considering the multiplicity of disciplines, it has been treated as a throwaway subject with all the other disciplines. Thus, not only do the various disciplines focus on aspects of the concept but they also make reference to it only during critical situations. For instance, the law discipline, as noted by Amponsah-Tawiah & Dartey-Baah (2011), makes reference to the concept only when employers are to pay compensations for health and safety failures.
Traditionally, the focus of Occupational Health and Safety (OHS) initiatives has been on chemical, biological and physical exposures or hazards, diseases, disorders and injuries related to or affecting work, while psychosocial risks at work are still largely neglected and their causes and consequences still insufficiently understood especially as they pertain in the developing country context (WHO, 2007). However, health issues involving the physical space of work; types of occupation and their effect on health; job stress, work schedules, and other psychosocial issues in the work environment affecting work (Warr, 1987) are all being given some attention in recent OHS initiatives particularly in developed countries. According to the WHO, all workers have the right to healthy and safe work and to a work environment that enables them to live a socially and economically productive life (WHO, 1994). This puts the human life at the centre of all productive activities, which must not be compromised at any cost.

At the international level, ILO promotes Occupational Health and Safety Management Systems (OHSMS) and since 1920s, several Conventions, Recommendations and other forms of guidance addressing safety and health in ports have been adopted, the most recent one being a comprehensive code of practice on the subject aimed at protecting people, properties and the environment (ILO, 2008). While protecting and promoting the health of workers, primary prevention and management of risks for occupational and work related diseases and injuries are considered as some of the objectives of the WHO Global Strategy on Occupational Health for All, (WHO, 2006). Even though these objectives are not contradictory but complementary to companies’ interests, as Robin (2003) has mentioned, companies and organizations have traditionally evaluated their health in terms of the bottom line.
2.2.1 Safety and Safety Climate in an organisation

The safety literature defines safety climate as a coherent set of perceptions and expectations that workers have regarding safety in their organisation, (Griffin & Neal, 2000). Workers’ perceptions of safety climate have been regarded as a principal guide to safety performance, which provides a potent proactive management tool. Consistent with this observation, Gyekye (2005) asserts that researchers have noted that workers with a negative perception of safety climate (e.g., a high workload, work pressure) tend to engage in unsafe acts, which in turn increase their susceptibility to accidents.

Similarly, workers who perceive job insecurity, anxiety and stress have exhibited a drop in safety motivation and compliance and recorded a higher accident rate, (Probst, 2002). On the other hand, workers with a positive perception of their workplace safety have registered fewer accidents (Probst, 2002). One aspect of organisational behaviour which is likely to affect workers’ perceptions of organisational safety climate, and in turn influence safe work behaviours, and accident frequency is the extent to which workers perceive their organisations as being supportive, concerned and caring about their general well-being and satisfaction.

2.2.2 Significance of Organisational Health and Safety

It is in the interest of workers and their representatives to earn a living, and also to reach old age in healthy conditions (WHO, 2007). These interests are not contradictory but complementary to company interests. Organisations have traditionally evaluated their health in terms of the bottom line (Robin, 2003). However, with past research uncovering enormous financial and human costs associated with unhealthy organisations (Cooper, 1994), human resource professionals have begun to position healthy workplace programmes and activities as a source of competitive advantage to curtail increasing health care costs; assist in the
attraction, acquisition and retention of employees; better manage the employer-employee relationship; meet the needs of an increasingly diverse workforce, and boost employee morale (Fulmer, Gerhar & Scott, 2006).

The goal of many organisations has been to avoid being unhealthy as opposed to optimizing health. There is however, a growing recognition that financial health correlates with investments in employee well-being (Goetzel, Guindon, Turshen & Ozminskowski, 2001), a condition which is gradually putting health and safety issues at the front end of work, job and organisational design efforts. Indeed, the costs of unsafe, stressful and unhealthy workplaces are horrific in personal, economic, and social terms (Kelloway & Day, 2005) and therefore require immediate attention. According to (Amponsah-Tawiah & Dartey-Baah, 2011) the past decade has witnessed an increasing number of publications addressing interventions aimed at preventing work-related illness and injury and employee health. The rising interest and investment in workplace health promotion raises no questions as a cost benefit analysis of the subject matter is more likely to go in its favour – an affirmation of Frost and Robinson's (1999) assertion that many business scholars are recognising the importance of healthy organisations and healthy people. For instance, a 2007/2008 survey by the Health and Safety Executive (HSE), as noted by (Amponsah-Tawiah & Dartey-Baah, 2011), on work-related illness estimated 34 million lost work days; 28 million due to work related illness and 6 million due to workplace injury (HSE, 2009).

Translating this in monetary terms means an erosion of a chunk of the profit margins of organisations. Jones et al (1998) in a similar study reported that 14% of the people in the United Kingdom who retired early did so because of ill-health and part of these ill-health conditions were believed to be the result of working conditions or at least made worse by working conditions. The belief that manpower is expandable (Stout, 1974) and that organisations can afford to lose some of their personnel only to be replaced in no time
appears to be a thing of the past. Organisations no longer can afford to lose experienced and committed employees through ill-health caused by unhealthy working conditions as the cost of recruiting, selecting, developing, motivating and retaining new employees who take over from experienced employees lost through work related ill-health remains incalculable.

Occupational Health and Safety therefore remains an important consideration for all organisations, particularly organisations engaged in high risk operations like the shipping, mining, logging and construction industries. Good OHS practices not only provide a safer working environment but also improve worker morale and productivity (ASCC, 2006). By pursuing good OHS practices, businesses face fewer workplace injuries and benefit from higher employee retention rates and enhanced corporate image. This reduces the costs associated with production delays, recruiting new staff and replacing equipment and avoids the resulting uncertainty and workload pressure placed on co-workers (ASCC, 2006). Businesses who strive to improve their OHS performance create safer workplaces, which benefit not only employers and employees but their families, their communities and their economies at large. This is evidenced by the effect of the Longford gas explosion in 1998, which left the state of Victoria in Australia without its primary gas supplier for 20 days. As natural gas was widely used in houses in Victoria for cooking, water heating and home heating, many families endured 20 days of cold showers and cold nights. Further loss to industries as a result of the crisis was estimated around 1.3 billion Australian dollars (Hopkins, 2001). The growing importance of the concept has led to some scholars advocating for it to be considered as a performance variable much like production, profits, sales, quality control or customer complaints (Kivimáki, Kalimo & Salminen, 1995). Considering that working adults spend at least a quarter to a third of their working life at work (Harter, Schmidt & Keyes, 2003) and the fact that job satisfaction is estimated to account for a fifth to a quarter of the satisfaction in adults (Harter et al., 2003), OHS issues in organisations that
include the emotional, physical, chemical and biological exposures of work should be of interest to all employers. National economies also enjoy the benefits of a thriving OHS policy as the benefits accrued to industries tend to trickle down in the form of taxation and a reduction on other social services (e.g., health care facilities, social support benefits). A high standard of OHS correlates positively with high Gross National Product per capita (WHO, 1994). The countries investing most in occupational health and safety show the highest productivity and strongest economy, while the countries with the lowest investment have the lowest productivity and the weakest economies (WHO, 1994). Thus, active input in occupational health and safety is associated with positive development of the economy, while low investment in occupational health and safety is a disadvantage in the economic competition.

2.2.3 Risk Factors of Port Activities

Hassanzadeh (2013), notes that ports are one of the most important logistical systems in a sense of global circulation and trade. Transportation Logistics (2008) further enlists five forces that will interact to shape the competitive landscape facing port authorities and port service providers in the 21st Century:

- Rivalry among existing competitors
- Threat of new competitors,
- Potential for global substitutes,
- Bargaining power of port users and
- Bargaining power of port service providers.

These forces will impact ports of all sizes, driving requirements for port expansion, service improvement, pricing decisions and other management actions. According to the World Bank (2011), winners and losers will emerge in the global port sector, largely dependent on how
port managers strategically position themselves in the evolving competitive landscape. In order to improve the quality of port service, initially, types of services that are offered to the port customers have to be identified. According to UNCTAD (1992), navigational services to ships and handling services to cargos are the two main operational and administrative functions of a port which is provided to shipping lines and cargo owners as the main port customers. This is illustrated below in Figure 2.1.

Figure 2.1, UNCTAD (1992), Development and Improvement of Ports. Geneva: United Nations’ Conference on Trade and Development
However, Thai et al. (2011) and Loh and Thai (2011) defined that, as processes and operations in the ports increase in their complexities and range, the integration of ports into supply chain management creates a higher level of uncertainties for downstream planning; product movement as well as information changes. To reduce accident and uncertainties in ports, there has to be a proactive plan to identify and manage hazards and risks, otherwise as mentioned by Talley (2009) port operator safety plans are often reactive, developed subsequent to worker accidents. At the Port of Hong Kong, for example, worker accidents have occurred from workers falling from high-stacked containers and being involved in object collisions. Hong Kong International Terminals created its safety and health policy to address worker high-risk operations (such as working on high-stacked containers), fire safety, and procedures for handling, storage, and transportation of dangerous cargoes.

Risk management is the core of proactive plans since it provides a sound basis for the improvement of safety. It should cover all work tasks and hazards in the work place and allows hazards to be assessed to see how harmful they are, ILO (2005).

The table below show different tasks in providing services to ships and cargos in port as well as examples of their associated occupational health and safety (OHS) risk factors;
<table>
<thead>
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<th>Tasks during handling services to cargo</th>
<th>Occupational health risk factors</th>
<th>Safety risk factors</th>
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<td>Lashing/unlashing</td>
<td>Inappropriate working posture</td>
<td>Fall from height</td>
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<td>Opening/closing of holds</td>
<td>Shift work</td>
<td>Smash with moving objects</td>
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<tr>
<td>Handling on board</td>
<td>Long time sitting position</td>
<td>Collision with lifting appliances</td>
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<tr>
<td>Quay transfer</td>
<td>Height</td>
<td>Fall of cargos</td>
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<tr>
<td>Delivery/reception</td>
<td>Ultraviolet waves</td>
<td>Fire</td>
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<td>Cold/ heat</td>
<td>Explosion</td>
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<td>Humidity</td>
<td>Fall to the sea</td>
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<td>Precise work</td>
<td>Collision with transfer vehicles</td>
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<td>Movement of heavy tools</td>
<td>Workers trapped by objects</td>
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<td>Dangerous cargos</td>
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<td>High speed operation</td>
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<td>Chemicals and gases</td>
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<td>Dust from cargoes</td>
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<td></td>
<td>Confined space</td>
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</table>

Table 2.1, Different tasks in handling services to cargos and examples of OHS risk factors

Source: Hassanzadeh, 2013, Occupational Medicine & Health Affairs

2.3 THE DOCK WORK

2.3.1 An exposition into the work of dockworkers – A historical perspective

Early cargo handling equipment was relatively primitive; utilizing the long-shoremen hook (Goldblatt, 1963) as well as systems of ropes and slings. The hook, a curved piece of iron or steel attached to a handle, allowed the men to grab onto bags of break-bulk cargoes like coffee and cocoa beans and bales of cotton. These labour-intensive operations were tiring for labourers, both quay and dockside. For example, in 1942, a 10,000-ton vessel loaded with bags of sugar from Hawaii took Californian labourers 6,650 man-hours to unload. Utilizing
five gangs of longshoremen on seven shifts, 10 hours each, the men moved the cargo, sack by sack (Goldblatt, 1963). These physically demanding work conditions led to workers routinely suffering accidents and sustaining personal injuries.

The introduction of the hooks, slings and early forms of winches eased the tension on the dock workers' backs. Workers tied ropes, creating a stopper knot, now known as the stevedore knot (Warde, 1989), around the cargo and hoisted the loads out of ships' holds using a system of pulleys. In the late 1700s, hand-operated cranes were introduced. London dockworkers, however, opposed the use of cranes (Alderton, 2005). Although working conditions and operational efficiency improved with such innovations, they conversely reduced the number of men necessary per ship. Fewer dockers potentially threatened the union's perceived dominance along the waterfront.

Following World War II, heavier load-bearing winches replaced winches that could only move cargoes of one ton or less at the Port of New York. Now equipment handled loads of increased volume and tonnage in a single movement. Although this innovation improved operational efficiency, due to the lack of safety measures, poorly maintained equipment such as frayed lines, and an increased demand on worker productivity, dockers continued to suffer worksite injuries, including hernias, falls and cuts from the collapse of the slings and falling cargo (Winslow, 1998).

Similarly, dangers existed within the vessels as well as quayside. Holdmen, individuals working and manipulating the cargo inside the vessel from the wings to the centre of the hold, communicated with winch operators via a system of signals. Holdmen's hand gestures informed winch operators where to move the cargo within the ships' confined spaces (Davis, 2003). An unnoticed or incomprehensible signal could lead to disastrous results for individuals stationed below the heavy cargo. Since holdmen performed their duties mostly in the square, also known as the opening of the hold, they had little space or time to escape
falling cargo, ranging from lumber products to steel pipes or if a sling were to hit a beam or rupture.

Inhaling dust, a second work hazard for holdmen, occurred because of the inherent vice of bulk cargoes—cement, talcum powder, and cocoa. Due to the poorly ventilated spaces, holdmen were unable to avoid the suffocating particulate matter, which led to long-term breathing disorders. Other hazardous products included asbestos, poisons, acids, and fertilizers. While dockers complained to supervisors about handling products with 'skull and cross bone' markings, management maintained their position that cargoes were safe to handle and workers continued to suffer injuries and develop chronic diseases (Davis, 2003).

2.3.2 Casual Labour of Dockworkers

On any given day, dependent upon the number of vessel calls, members of gangs shuffled within and among the terminals and management hired different men on various days to handle diverse cargoes, hence fostering the casual nature of the workforce. For example, at the United Kingdom docks from 1947 until 1967, men arrived outside the docks for a chance to receive a ticket 7.45 am and 12.45 pm, guaranteeing a day of work (McNamara and Tarver, 1999). Accordingly, individuals selected and assigned to various gangs one day could be completely different from those chosen the following day. Because it took time to learn one another's strengths and weaknesses in the loading and unloading operations, gangs' work expertise and capabilities changed daily affecting the rhythm of daily operations. These differences created conditions for accidents among inexperienced workers.

During World War II, the UK abolished the use of casual labour and instituted the National Dock Labour Scheme (NDLS) to maintain a more stable civilian workforce. The reversal of NDLS in 1989, reintroduced casual labour and allowed stevedore companies to compete for business at UK docks. In an attempt to reduce operating costs and effectively compete among more companies, stevedore organisations decreased the amount of training and welfare
benefits workers received. As might have been predicted, the number of accidents among port workers increased (McNamara and Tarver, 1999).

2.3.3 Speed of Operations

In addition to casual labour, the rapidity which ships required for loading and discharging contributed to high accident rates. The monetary factor influenced both worker and ship-owners. First, workers received payment by a piece rate system and second, ships needed to achieve quick turnaround in the trade lanes. The piece rate system entitled dockers to be paid based on the number of break-bulk products they handled, such as per bag of coffee or drum of cargo unloaded. Since the more cargo handled would yield greater pay per day, labourers concentrated solely on the speed of their movements. More movements equating to more pay was the driving force. Consequently, all parties ignored safety protocol, if it existed, and concern for others.

Secondly, vessels do not make money while berthed. Ship-owners earn profit on the number of turns their vessels make annually. If the vessel waits in port, achieves fewer turns, and accrues higher mooring costs (those costs charged by the terminal to use berth space), then the ship-owner achieves lower profit margins. Ship productivity necessitated efficient functionality at each port of call with minimal interruption. Accordingly, a ship-owner sought such ports. As a result, terminal operators demanded workers perform proficiently to assure repeat vessel calls. Again, such hastened operations created an environment where safety measures were largely ignored.

2.3.4 Training

The lack of dockworker training contributed to high accident rates among dockworkers. Few ports created training programmes emphasising safety protocols. And for those ports that did
have policies, they were rarely enforced (Davis, 2003). Training was not a new concept, apprenticeship programmes date back to ancient times when master craftsmen shared their talents and techniques with younger, unskilled labourers. However, during periods of industrialization, training was overlooked in favour of reduced costs and quick-paced operations. Safety protocols, then as today, were expensive to create, institute and monitor. In addition, conducting on-the-job training slows down port operations while labourers learn hands-on safety processes. The actual job takes longer to complete, thereby, potentially reducing revenue for all stakeholders from dockworker to ship owner.

During its existence, registered workers within NDLS participated in a required port training which consisted of a four week college safety course. With the elimination of the NDLS, terminals hired fewer employees and colleges trained fewer employees. The economies of scale for teaching larger groups of dockworker-students eroded, thus increasing the price of training per dockworker (McNamara and Tarver, 1999). Eventually, port authorities and terminal managers deemed extensive training as an ancillary cost and replaced the training courses with the adoption of the UK Health and Safety at Work Act of 1974. Among the criticisms of this act is the lack of required safety training courses and specific skills for dock workers. Currently, standards in training vary from port to port.

2.4 ECONOMIC INCENTIVES TOWARDS IMPROVING OCCUPATIONAL HEALTH AND SAFETY

2.4.1 Economic Incentives: Definitions and Explanations

The European Agency for Safety and Health at Work (EU-OSHA, 2010) has recognised that beyond taking direct measures to ensure compliance with legislation, such as inspection and the issuing of penalties, occupational safety and health (OHS) policies can be promoted
through economic incentives that reward organisations which develop and maintain safe and healthy working environments. This portion of the literature review looks further into that and explores how it could be adopted in Ghana and the possible change it could bring to Occupational Health and Safety in the country.

Economic incentives in OHS refer to processes that reward organisations which develop and maintain safe and healthy working environments. The main aim of this concept is to examine how enterprises and employers can be influenced and motivated in order to do more about OHS. According to the (EU-OSHA, 2010) economic incentives may also be defined as external economic benefits offered to employers to motivate them to invest in safer and healthier workplaces (see also European Agency for Safety and Health at Work, 2005). The incentives in OHS described are thus external and economic. External means that these incentives are established by organisations outside the enterprise, usually public administration bodies or insurers; these incentives may act at national, regional or sector level. With regard to the economic aspect of incentives, there are two major categories:

- financial incentives (positive or negative), such as insurance-related OO incentives (e.g. variable premiums), funding schemes, and tax-based incentives (tax reduction or specific taxes); and
- non-financial incentives, including recognition schemes such as awards; aiming at positive recognition but not having substantial direct financial implications.

2.4.2 Economic Incentives: Theory and Application

According to economic theory, the market mechanism is able to determine the optimal level of occupational health and safety. Workers as rational actors can assess the level of risk inherent in a job and balance those risks against the benefits associated with that job. If benefits are not sufficient to compensate for the risks, then workers will not sign up for the
job, even though this is unlikely the case of Ghana where for reason of economic difficulties people will still sign up. Accordingly, employers will have to increase wages to a level that will encourage sufficient numbers of workers to perform this job. The added wage level that needs to be paid to compensate for a higher level of risk constitutes an additional cost to the employer. If it is too high, the employer can avoid it by increasing the level of safety. Such an incentive to make jobs safer will exist to the extent that the marginal cost of increasing job safety is less than the corresponding wage differential that will have to be paid if no such change is made.

This economic model assumes, however, perfect competition in the labour market and perfect information on the part of employees over workplace risks and the possible consequences of these risks. As the result of a range of friction elements, there is, however, never perfect competition in the labour market in the sense that workers are perfectly free to switch jobs. Therefore, additional instruments are required to encourage employers to improve working conditions. As the traditional OHS strategy of 'command and control' based on specifying legal prescriptive requirements and the desired level of safety and health can always be improved, social partners, governments, politicians, researchers and insurance companies are increasingly looking for new ways of improving the working environment beyond the minimum level required by law.

Dormann (2000) stresses the role of economic incentives in the area of OHS in his well-known report for the International Labour Organisation (ILO). According to Dormann (2000) study, the previous way of providing economic incentives in order to improve working conditions was hazard pay, i.e. employers pay workers a higher wage in return for a greater risk of injury or illness. Dissatisfaction with hazard pay and employer liability as a means for compensating workers at risk gave rise to mandatory public insurance programmes. The fundamental principle behind all workers’ compensation systems is the replacement of employer liability
with a programme of guaranteed payments to injured workers or their families. Workers thereby lose the right to make most kinds of liability claims against employers but, on the other hand, are entitled to awards from a publicly regulated insurance system. Employers usually finance this worker insurance system through contributions based on the size of their payroll. The coverage of the system, the level of compensation, the amount collected from premiums, and the procedures for adjudicating disputed cases are determined by public agencies.

Thus, according to Dorman (2000), workers' compensation systems always provide a combination of pure insurance functions and government regulation. The weak point of most of the insurance schemes is, however, a lack of simple correlation between preventive activities and financial benefits. Economic incentive schemes could be a practical means of closing this gap and, according to Dorman (2000), yields the following particular advantages:

- Economic incentives are linked directly to business performance. Their impact on economic measures of enterprise performance is easily seen by managers.

- Economic incentives can stimulate continuous improvement. This is in stark contrast to most regulations specifying a minimum performance level. Often, once the requested minimum has been attained the regulation is satisfied and no further improvement is required.

- New risks require the establishment of new regulations but policy-making is in many cases a long process. By focusing not on the process by which risks are generated but on their outcomes, economic incentives already apply to both traditional and emerging risks.

- Because they are based on outcomes rather than methods, economic incentives encourage problem-solving and innovation.
Besides the EU commission and the ILO, the European Foundation for the Improvement of Living and Working Conditions has also been active over the last two decades helping policy-makers to develop economic incentives systems at national and European level. For instance, a ‘European Forum’ was established in 1993 for Member States to exchange views and experiences on this topic. Based on these discussions a multidisciplinary working group has developed the ‘European Model for Motivation by Incentives’, the so-called EMMI. The proposed model operates within a framework of compulsory industrial injury insurance paid by the employer. However, the incentives aim to mobilise a number of social parties within and outside the individual enterprise. The main tools suggested are premium graduation with a bonus system and direct investment aid aimed at helping enterprises that want to achieve major changes by incorporating preventive measures. Such changes could, for instance, include costly investment in new technology, training efforts and product innovation.

2.4.3 The situation of Occupational Health and Safety in Ghana

The African continent is witnessing a verifiable shift towards peace, stability and economic growth. This situation is making the world appreciate West-Africa for its significant investment opportunities. Ghana is one such country in the sub-region experiencing rapid industrialisation in recent times.

Industrialisation as discussed above comes with its own problems, one of which is OHS. In the view of (Dartey-Baah and Tawiah-Amponsah, 2011), in countries like Ghana with a fast growing labour force coupled with a growing informal sector as opposed to the formal sector, workers have tended to fight for job security while neglecting the need to promote the quality of work life, although the provision of a safe and healthy work environment is a human right issue, and investment in occupational health and safety yields improved working conditions, higher productivity and better quality of goods and services. A commonly used argument has
been that poor countries and companies cannot afford safety and health measures. However, there is no evidence that any country or company in the long run would have benefited from a low level of safety and health. On the contrary, studies by the ILO based on information from the World Economic Forum (2002) and the Lausanne Institute of Management IMD demonstrate that the most competitive countries are also the safest. Selecting a low-safety, low-health and low-income survival strategy is not likely to lead to high competitiveness or sustainability (ILO, 2003).

Lack of comprehensive OHS policy, poor infrastructure and funding, insufficient number of qualified occupational health and safety practitioners, and the general lack of adequate information are among the main drawbacks to the provision of effective enforcement and inspection services in most African countries (Muchiri, 2003). The Republic of Ghana epitomises the above assertion in its entirety.

In spite of the numerous investments that the country attracts with its accompanying OHS related issues, Ghana as a nation still has no national policy on OHS. A draft occupational services policy jointly developed by the Ministries of Manpower Youth & Employment, Health and Lands, Forestry & Mines as far back as the year 2000 is yet to be adopted. The governments of Ghana, past and present, have not shown any political will, commitment and support for bold occupational health and safety policies. This is evident in the fact that out of over 70 conventions/recommendations of the ILO that are OHS related, only ten have been ratified by the government of Ghana (i.e., Conventions 45, 81, 89, 90, 103, 115, 119, 120, 147 & 148). Surprisingly the four core conventions on occupational health and safety (i.e., Conventions 155, 161, 170 and 174) have all not been ratified. Though the recently promulgated labour Act 2003, Act 651 has a section which covers OHS (i.e., Section 15), it is amazing that the very tenets on which the section is built (i.e., ILO Conventions 155 and 161) have not been ratified by the government as yet. Indeed, the ratification of ILO conventions
cannot be said to be the panacea to the numerous OHS issues that confront today’s organisations. However, it sends a strong and clear message to investors and employers that the country attaches some importance to issues of OHS. This kind of message is bound to reflect in their commitment and approach towards OHS when in operation. The reverse is also a possibility.

Two main statutes have informed the execution of OHS in Ghana. These are the Factories, Offices and Shops Act 1970, Act 328 and the Workmen’s Compensation Law 1987, PNDC Law 187. The main provisions of the Factories Offices and Shops Act 1970 concerns improvements necessary to attain internationally accepted standards of providing for the safety, health and welfare of persons employed in factories, offices, shops, dock work and construction, Dartey-Baah and Tawiah-Amponsah, (2011). Missing in the coverage of industries under the Act is the vast majority of industries including agriculture, and most of the organisations under the informal sector. Provisions in the Act are also very limited in scope providing inadequately for prevention. Preventive strategies like risk assessments, medical surveillance and control of hazards are not for instance catered for in the Act. Also missing in the Factories Offices and Shops Act are standards against which services will be measured. The lack of uniform standards against which organisations could be evaluated has resulted in factory inspectors assuming a lot of discretionary powers and falling to the temptation of abuse of power. Apart from the Radiation Protection Convention, 1960 (No. 115) ratified in 1961, there are no regulations and rules for certain classes of hazardous work situations such as agriculture, construction and others. This makes it more difficult for employers to comply with laws and further add to the discretionary powers of inspectors.

The Workmen’s Compensation Law 1987 provides for the payment of cash compensation by an employer to an employee in the event of injury resulting from accident on the job and in the event of death, payable to dependants through the courts. The question that many have
asked in the past and continue to ask is: what amount of money can compensate for the loss of a limb or at worst a loved one? Compensations as prescribed by the Workmen’s Compensation Law bear no relation to the level of risk to which workers are exposed. In fact, the prosecution and court processes associated with compensation cases are laborious and time-consuming for the meagre amounts prescribed by the laws. This may imply that laws are not just a cosmetic decoration for employers but somewhat unnecessary. Some organisations in Ghana still operate under the assumption that the protection of limb and life should be a reason sufficient enough for workers to behave safely. Hence they tend to trample flagrantly on the rights of employees by not providing adequate health and safety protection. Indeed, many are the organisations that operate under the assumption that the provision of personal protective equipment is sufficient to prevent occupational accidents. Other statutes that have bearing on OHS in Ghana are the Mining Regulations 1970, LI 665, the Environmental Protection Agency Act 490, 1994, the Ghana Health Service and Teaching Hospitals Act 526, 1999, Ghana Aids Commission Act 613, 2002 and the Labour Act 651, 2003. Facilities for providing occupational health services in Ghana consist basically of government and private and faith-based health facilities in the communities. However, a few companies have their own facilities that cater for the health and safety needs of their employees. Services provided by the existing facilities are very limited as compared to those prescribed by the ILO Convention No. 161 on Occupational Health Services. Primary medical care is the norm with the provision of basic curative care and first aid becoming the order of the day. With the exception of a few multinational companies who undertake comprehensive preventive occupational activities, (i.e., medical surveillance, risk assessment, worker education on HIV/AIDS prevention programmes) these are grossly lacking in the country. The key staffs represented in the country’s occupational health services are the typical health care workers found in health institutions (i.e., doctors, nurses, and paramedics). Seriously lacking in the
country are professionals specifically trained in the area of occupational health. Records from the Ghana Health Service (GHS) indicates that there are only four occupational health physicians, one occupational health nurse and 34 trained factory inspectors (GHS, 2007). The situation is further compounded by the absence of institutions that offer the requisite training programmes in the area. The School of Public Health at the University of Ghana, which was established in 1994 with the mission to train public health practitioners who will be leaders and change agents for health development in Ghana in particular and in the wider African context is still struggling to institute an occupational health programme. Capacity building, a prerequisite for obtaining the right calibre of staff to man occupational health services, remains a major challenge in Ghana. The above description of the state of occupational health services in Ghana reflects the safety culture of the nation; “All die be die” to wit every death is ordained. Thus in a poverty stricken country like Ghana, people are prepared to sacrifice their lives to earn a living. This, considering the large investment inflows into the country in the area of mining and construction (two hazardous industries) should raise concern for researchers and policy makers in the country.

2.5 PORT ADMINISTRATION IN GHANA

The Ghana Ports and Habours Authority is the main administrative body that oversees the two major harbours of Ghana. It is charged with the responsibility of planning, building, managing, maintaining and operating the seaports of Ghana. These include The Tema Port in the east and thirty (30) km away from Accra, and The Takoradi Port in the western part of the country and approximately two hundred and thirty (230) km away from Accra. These ports have seen growing volumes of cargo passing through them mainly because of the huge demands by Ghanaians for goods produced outside the country, amidst dying local industries.
Then again, it serves a useful pathway for some landlocked countries like Mali and Burkina Faso who receive their imported goods through Ghana.

With bigger and better facilities being phased in by Ghana Ports & Harbours Authority (GPHA) and with central government offering new incentives for trade, more and more shippers are discovering the benefits of using Ghana’s ports. With its central location in the sub-region, Ghana has stolen a march on its neighbours by offering a wider range of maritime services than ever before – and delivering those services quickly and cost-effectively. (http://ghanaports.gov.gh, 2013).
CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

The methodology explains the approach taken by the researcher to address the research questions and the objectives of the study. It mentions the target population considered, how the sample was drawn, the data collection instrument used and the approach taken to analyse the data collected.

3.2 RESEARCH DESIGN

The research is designed to be both descriptive and exploratory. The main goal of descriptive research is to describe the situation of the Occupational Health and Safety Management System (OHSMS) as it pertains at the Tema Port. The OHSMS has been implemented by the Port authority for some time now; the research enables an examination and evaluation of the system. Descriptive research is mainly done when a researcher wants to gain a better understanding of a topic (Creswell, 2007). The exploratory aspect of the research is to provide deeper insights and understanding not just by display of simple descriptive statistics as in descriptive researches. Information needed is defined only loosely and research process is flexible and unstructured, (Rofianto, 2011). This is particularly applicable as the research seeks to find out the ways the proper implementation of system impacts on the performance of workers at the Port.

3.3 TARGET POPULATION

The target population for the study is all the workers the main port area of Tema where dock workers operate on a daily basis. This target group is an important section of the port
workforce so far as safety and health issues of port workers are concern. The total number of the workforce may be estimated to be about 1500.

3.4 SAMPLE AND SAMPLING PROCEDURE

The sample size was chosen considering the short time available for the project, so that the researcher would be able to collect data from most of the dock workers. A number of non-probability sampling methods were used to select the sample. The first is convenience sampling. Convenience Sampling is selecting the research participants on the basis of being easily accessible and convenient to the researcher. In the view of Baumgartner, Strong and Hensley (2002) this type of sampling is less expensive, not so time consuming, more convenient and gives results as valid as the results obtained from probability sampling. And this rightly serves the purpose and helps achieve the results for the work.

The other non-probability sampling approach is purposive sampling. The purposive sampling method was to select management members among the workforce who are supposed to have knowledge about the design and implementation of the OHSMS. The responses from such managers and supervisors are used to understand exactly what the system is supposed to achieve while the responses from the workers are useful in evaluating the performance of the system. In all 150 dock workers were selected together with 10 managers and supervisors.

3.5 DATA COLLECTION - INSTRUMENTATION AND ADMINISTRATION

The data collection instrument used was the survey questionnaire. The questionnaire consisted of both closed and open ended questions. The main reason for using questionnaire lies in the quality of the data obtained, even though incomparable to interviews, it does not
take away the limited time that may be available to the respondent. It also reduces ambiguity and there is a better chance of getting the filled questionnaire back.

Interviews were however used to collect information from the managers and supervisors of the dock workers. These interviews were used to cross check information gathered from other employees thereby increasing the validity of data collected.

Some secondary data from the archives of the workforce were relied on to gain some statistics on accidents that have occurred at the port.

3.6 APPROACH TO DATA ANALYSES

The responses obtained from the questionnaire are entered into the software called SPSS, which was used for the analysis. Charts and frequency distribution tables were produced with the aid of the SPSS software and MS Excel to provide pictorial views of what is being explained or described from the results obtained.
CHAPTER FOUR

RESULTS AND ANALYSIS

4.1 INTRODUCTION

This chapter deals with the analysis and discussion of the responses that have been obtained during the data collection exercise. With the sample of 150 dockworkers that was selected, 97 responses were obtained from the questionnaire that was distributed, representing a 64.6% response rate. Considering that a major part of the research was descriptive, descriptive analyses approach were employed.

4.2 DEMOGRAPHICS

The demographics gives the background information of the kind of people who responded to the questionnaire. Knowing the gender, age and how long the dockworkers surveyed have worked at the port helps put the analysis and the results that are being discussed into proper perspective.

Figure 4.1 Gender Distribution of Respondents

Source: Field work 2013
A huge gap is observed between the male respondents and the female respondents at the Tema Port. About 90.5% were males and 9.5% were females. This is not surprising because port work is a male dominated area of work. Agbola (2012) also noted that most of the departments were filled with more males than females in her research about the Ghana Ports and Habours Authority, the difference was 67.5% males and 33.5% females. That notwithstanding, the huge gender difference may be because dock work may be difficult and require more strength than jobs in other departments of the port. It may not be too early to presume that the occupational standards of the Tema Port are likely to improve relative the number of female workers who work there. This is because generally females are noted to be more cautious of their safety anywhere they find themselves than males.

**Figure 4.2 Age Distribution of Respondents**

![Age Distribution](image)

**Source: Field work 2013**

The age distribution of the dockworkers show a relatively young or youthful group of people in the dock work section of the Tema Port. Over 35% are aged between 26-30 years, 28% are aged 31-40 years and 20% of the respondents are aged 18-25 years. This result may be expected considering the nature of the dock work. Older people with not much strength will
not find it comfortable doing a job that involves a lot of manual labour and regular ‘up and down’ movements around the quay.

Figure 4.3 Distribution of Period Working at the Port

<table>
<thead>
<tr>
<th>Period working at the Port</th>
<th>0-6 months</th>
<th>7-11 months</th>
<th>1-3 years</th>
<th>4 years and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6 months</td>
<td>11.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-11 months</td>
<td>21.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 years</td>
<td></td>
<td></td>
<td>40.5%</td>
<td></td>
</tr>
<tr>
<td>4 years and over</td>
<td></td>
<td></td>
<td>26.6%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field work 2013

Quite a large proportion of the dockworkers, about 40.5%, have been working in their current job for 1-3 years and 26.6% have been working for more than three years. All in all, some 67.1% have spent at least 1 year working as dockworkers. This is important because, responses are coming from majority of the workers who have spent a considerable amount of time working in the dock. On the other hand, 32.9% have spent less than a year at the dock.

4.3 KNOWLEDGE OF POLICIES AND TRAINING IN SAFETY AT THE PORT

All the dockworkers surveyed acknowledged the existence of an Occupational Health and Safety Management System (OHSMS) policy for workers at the Tema Port. This is shown by the 100% response in the chart below.
Nonetheless, about half of them confirmed that the policy is known to the workers while the other half do not know anything about the OHSMS policy. This means that as many as half of the dockworkers do not know the health and safety rules and regulations guiding the conduct of their work. It is possible this policy has been mentioned to the workers in an orientation or they might have heard about it from their colleagues; they themselves might not have been so interested in knowing about the policy. There are other things that drive employees usually engaged in this kind of work. According to (Amponsah-Tawiah & Dartey-Baah, 2011), the need for these workers to survive is more important to them than consenting or paying attention to some rules. Amponsah-Tawiah & Dartey-Baah (2011) noted that in spite of the numerous investments that Ghana attracts with its accompanying OHS related issues, even the country still has no national policy on OHS. They further explain that a draft occupational services policy jointly developed by the Ministries of Manpower Youth & Employment, Health and Lands, Forestry & Mines as far back as the year 2000 is yet to be adopted.
Therefore, it may not have been so surprising if the management of the Tema Port does not have a workable OHSMS policy.

**Table 4.1 Knowledge of policy by dockworkers**

<table>
<thead>
<tr>
<th>Questions posed to respondents</th>
<th>Nature of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know much about the details of this policy</td>
<td>Mean 2.90</td>
</tr>
<tr>
<td>Applying the health and safety training has been useful to me</td>
<td>Mean 3.75</td>
</tr>
</tbody>
</table>

*Note: Strongly disagree -1, Disagree -2, Neutral - 3, Agree – 4, Strongly Agree - 5*

*Source: Field work 2013*

The mean of the responses of the dockworkers who know about the policy, as to the degree of detail they have about the policy show majority of them disagreeing to having detailed information about the policy. Even though some responded agree, ie ‘4’, the general response as indicated by the mean of 2.9 show that most of them do not have much information about the OHMS policy of the port.

In spite of the fact that those who knew about the policy did not have much information about the report, some seem to have made good use of it. There is a general view from the dockworkers, though not strong, that applying the health and safety training has been useful to them.
Have you received any training on how to keep yourself safe from harm at the workplace?

- Yes
- No

Source: Field work 2013

Questioning as to whether the dockworkers had received any training on safety; essentially how to keep themselves safe at the workplace showed a lot of work has been done in that direction. This means that over 80% of the workers are in agreement that training is done by the port for dockworkers. It is possible the 20% that have not received may not have been present when such a training was being conducted or since they joined the workforce at the Tema Port no such training has gone on.
4.4 PERSONAL PROTECTIVE CLOTHING

Figure 4.6 Distribution of Use of Protective Clothing

<table>
<thead>
<tr>
<th>Use of protective clothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field work 2013

All the dockworkers confirmed the need for them to wear personal protective devices or clothing for their jobs. Unfortunately, only 25% confirmed to wearing safety and protective clothing or devices for their jobs. This exposes quite a majority of the workers to hazards that are associated with their work leaving them vulnerable to various degrees of dangers or possible injuries. This results seem to correlate with the (ILO, 2008) report that dockworkers are among those most susceptible to work hazards at the port. Some of the factors mentioned to contribute dockworkers not wearing protective clothing include the unavailability of protective clothing devices and the fact that most of the time they are exposed to physical dangers. Even though, the International labour organisation did not quantify the dangers in that respect, it appears to be a serious issue in Ghana requiring a high degree of attention.
4.5 IMPLEMENTATION AND ENFORCEMENT OF HEALTH AND SAFETY RULES AND REGULATIONS

Table 4.2 Implementation and Enforcement of OHS Rules and Regulations

<table>
<thead>
<tr>
<th>Questions posed to respondents</th>
<th>Nature of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel obliged to observe the health and safety regulations that have been laid down by the port</td>
<td>Mean: 3.21, Minimum: 1, Maximum: 4</td>
</tr>
<tr>
<td>I am aware that my health and safety is my responsibility</td>
<td>Mean: 3.75, Minimum: 3, Maximum: 5</td>
</tr>
<tr>
<td>If there are no proper safety measures at the place of work</td>
<td>Mean: 4.00, Minimum: 2, Maximum: 5</td>
</tr>
<tr>
<td>I demand that from my supervisors</td>
<td></td>
</tr>
</tbody>
</table>

Note: Strongly disagree -1, Disagree -2, Neutral - 3, Agree – 4, Strongly Agree - 5

Source: Field work 2013

Quite unfortunately, a recognisable proportion of the dockworkers do not feel obliged to observe the health and safety regulations that have been laid down by the administration of the port. This is seen in the mean of the responses above. It is noted that a mean of 3.21 obtained for whether dockworkers feel obliged to observe the health and safety regulations that have been laid down by the port, indicate the general response of the dockworkers being between ‘Neutral’ and ‘Agree’ and not even fully ‘Agree’. This means that some of the dockworkers do not seem to care so much about their safety. It is the expectation that most of them would respond ‘Agree’ and ‘Strongly Agree’ to taking personal responsibility for their health and safety by following the laid down rules and regulations. Some industry watchers believe the fast growing labour force in Ghana coupled with a growing informal sector as opposed to the formal sector, is what has resulted in worker who tended to fight for job security while neglecting the need to promote the quality of their work life. This may be what is at play in this case.
Still, the awareness level of the respondents towards their health and safety is low. Most of the dockworkers do not fully agree to being aware of their health and safety needs. A mean response of 3.75 is a weak agreement response to awareness of health and safety responsibility.

Amazingly, a good proportion of the workers say they demand proper safety measure from their supervisors when these things are not well set up in the workplace. These responses reveal an attitude of lack of self-responsibility. Even though they were not willing to take responsibility for their safety they were ready to demand it from their superiors. The mean response of 4.00 which confirms ‘Agree’ indicates this is the response of a fair majority of the dockworkers.

Figure 4.7 Distribution of Responses on Enforcing Safety at the Port

In the view of about 64.3% of the dockworkers, the supervisors do not make sure that the workers observe the safety rules and regulations. It can be inferred from the previous responses that if the dockworkers do not take responsibility in their own little way of being
cautious and observing the safety rules, then there is not much that can go into safety so far as
dockwork is concerned.

Hassanzadeh (2013) mentions that conducting safety inspections at a port is part of the duties
of management to reduce life losses that cannot be explained. Meanwhile, more than half of
the dockworkers believe they have not seen management or their representatives assessing
the safety situation at the port. For only 40% to have responded to have seen such inspections
being conducted indicates that even if it happens at all it might be irregular or it has not
happened in a long while. This show some weakness on the part of the dock supervisors and
management of the port so far as the safety of the workers is concerned.

Table 4.3 How often management of the Port conduct safety inspections

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fortnightly</td>
<td>0</td>
</tr>
<tr>
<td>Monthly</td>
<td>0</td>
</tr>
<tr>
<td>Quarterly</td>
<td>29.9</td>
</tr>
<tr>
<td>Half-yearly</td>
<td>47.8</td>
</tr>
<tr>
<td>Yearly</td>
<td>22.3</td>
</tr>
</tbody>
</table>

*Source: Field Work 2013*

For the workers who have seen these safety assessments being conducted at the dock area,
over 50% think they are done once every six months. Even though literature reviewed did not
mention the number of times dock inspection or safety assessments to be done, the (ILO,
2008) asserts that it should be done regularly.
The International Labour Organisation, (2008) noted that in jurisdictions where there are public discussions of occupational safety and health issues occupational safety and health standards are high. The response shown in the pie chart above does not indicate this to be the case for the Tema Port. When public attention are drawn to issues like this through newspaper reporting and other journalistic works, demands are made of the management to put in place the right safety measures for the workers. Again, public discussions like stakeholder forums give the opportunity for the appropriate labour organisations to inquire about the safety of workers. Tema Port, and like many other industrial workplaces in Ghana do not seem to prioritise occupational safety and health, until there is a disaster. A situation that makes them reactive and less proactive to the safety of workers.

4.6 CAUSES OF WORKPLACE ACCIDENTS

The responses gathered from the dockworkers on the causes of accidents can be grouped into two. First is those that are attitudinal. These are caused as a result of the workers’ own fault
and secondly, those that are as a result of the machines and equipment being used by the workers.

Some of the causes of workplace accidents at the dock which are attitudinal include: negligence, carelessness, ignorance, non-compliance with work safety rules and policies, incompetence, over confidence attitude and complacency and non-adherence to work procedures. As noted above, some of the workers were not being diligent to observe the safety rules and regulations. There had to be an external compulsion which reveals deep negligence on the part of the dock workers. A major part of the problem of OHS in Ghana also obviously lies with the workers in various workplaces who do not care to step up to their own safety.

The machine or non-human related incidents include lack of maintenance on some container tracks, breakdown of machines and lack of technical know-how, and lack of information and expertise in handling dangerous chemicals. Even though workers could be diligent with their safety, a faulty crane or forklift can lead to physical damages which would definitely not be the fault of the worker.

**Figure 4.9 Distribution of Workplace Accidents**

<table>
<thead>
<tr>
<th>Workplace accidents</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you ever experienced any accident in the workplace</td>
<td>80.5%</td>
<td>19.5%</td>
</tr>
<tr>
<td>Have you experienced any illness that is related to the work you do</td>
<td>72%</td>
<td>28%</td>
</tr>
</tbody>
</table>

*Source: Field work 2013*
More than 80% of the dockworkers have experienced some kind of accident at the workplace. This results bring to the fore two issues; either the workers do not take good care of themselves; that is not being so responsible for their safety or their working environment is not safe enough. Only 19.5% have not had any form of accident at the workplace.

Apart from directly getting accidents from the workplace, 72% of the dockworkers said they have had illnesses that are much related to the work that they do. Even though it is not unusual for employees or workers in an organisation to get some sickness as a result of the nature of the work they do, this proportion is quite huge and again shows poor education on how the workers can do their work in a way that will not be damaging to their health.

4.7 LEVEL OF SAFETY AT TEMA PORT AS RATED BY THE DOCKWORKERS

Table 4.4 Level of Safety at Tema Port

<table>
<thead>
<tr>
<th>Rating</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very unsafe</td>
<td>22</td>
</tr>
<tr>
<td>Unsafe</td>
<td>38</td>
</tr>
<tr>
<td>Neutral</td>
<td>15</td>
</tr>
<tr>
<td>Safe</td>
<td>10</td>
</tr>
<tr>
<td>Very safe</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Field work 2013

On the level of safety of the workers, 22% believe they are very unsafe at the dock area and 38% feel they are just unsafe. While 15% are neutral, 10% think they are safe and 5% are of the opinion that they are very safe. Generally, the results show a majority of 60% who believe they are not in a safe working environment and that anything could happen to them. Only a small proportion of 15% think otherwise.
Table 4.5 Impact of health and Safety on Performance

<table>
<thead>
<tr>
<th>Questions posed to respondents</th>
<th>Nature of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have thought of leaving the work because of the accidents that do happen there</td>
<td>Mean: 3.21 Minimum: 1 Maximum: 4</td>
</tr>
<tr>
<td>I do not give my all during work with the fear that I might get an accident</td>
<td>Mean: 3.75 Minimum: 3 Maximum: 5</td>
</tr>
</tbody>
</table>

Source: Field work 2013

Note: Strongly disagree - 1, Disagree - 2, Neutral - 3, Agree – 4, Strongly Agree - 5

In spite of the responses that the dockworkers have given about the unsafe nature of the dock work as a result of accidents that happen there, there are only a few of them that have thought of leaving the job. The mean response of 3.21 shows that the responses are in the direction of disagreement and that is surprising.

Similarly, with a mean response of 3.75, the dockworkers seem to be saying they give their maximum output during work even if the probability of getting accidents are high. They generally seem to be disagreeing that they must not give their maximum output because they could get accidents on the job.
Most of the workers claim they do not report incidents or accidents to the management or their supervisors. Even though the reason is not known, it could be inferred from the responses given for “whether management supports employees financially when there is an accident”, that there is not really any motivation to report. This is because about 65% says sometimes you do get support when taken to the Port Clinic, other times you do not. It is therefore more or less an issue of chance or there may be some investigations that are conducted by the Port management to ensure the accident was not the fault of working machines or the environment. It is possible the employees do not go through the appropriate channels to make their case or the issue surrounding the incidents may not be so right, otherwise the Port should be able to support such employees easily. Some of these matters affect their motivation and enthusiasm towards work.
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

This part of the research work concludes and summarizes the findings that have been obtained from the analyses of the data collected. Conclusions are based on the objectives of the study, which further informs the recommendations that have been made.

5.2 SUMMARY OF FINDINGS

The findings of the study indicate that almost all the workers surveyed knew that the Tema Port had an Occupational Health and Safety policy. Generally, this policy is supposed to guide employees on the safety requirements and precautions of the work environment. Then again when there are accidents the policy is supposed to outline how they should be addressed. Even though all the workers seem to know about this policy, only about half of the respondents indicate that they know about its content.

Also, there is also much information available to the workers on how to keep themselves safe from harm at the dock as a large proportion of the respondents have received training in that regard.

Even though all the dockworkers acknowledged that some level of protective clothing are required for their jobs, most of them admitted to not wearing those protective clothing. While tangible reasons were given by the workers, it is noted that after a period of time when workers become comfortable on their jobs they are most likely to take safety regulations for granted, especially if they have not had accidents in the past.

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Generally, the dock workers are noted not to feel obliged for their own safety at the port. Their response is also lackadaisical as to whether they know their safety is their responsibility. Nonetheless, most of them seem to be quick to demand from their supervisors to do their billing with regards to making sure their working environment is safe and in cases of accidents.

To some significant extent, the management of the port conducts safety inspections at the port and also ensures that workers do comply with the safety rules and regulations that have been set up. The workers responded that these inspections are usually done after 4-6 months. Among the many ‘employee – management’ meetings that are organized, none is focused on discussing the health and safety issues at the port, according to the dockworkers.

Two major factors are known to contribute to the workplace accidents at the port; the attitude of workers and machine related accidents. Some of the causes of workplace accidents at the dock which are attitudinal include: negligence, carelessness, ignorance, non-compliance with work safety rules and policies, incompetence, over confidence attitude and complacency and non-adherence to work procedures. The machine or non-human related incidents include lack of maintenance on some container tracks, breakdown of machines and lack of technical know-how.

Workplace accidents are real at the Tema Port. A large proportion have experienced an accident at the port while some have had illnesses related to the work that they do at the port. In view of this the level of work safety rating given by the workers of the organization is very low.

More than half of the workers have thought about leaving their current jobs for safety reasons and worse of all, a significant proportion of the workers responded that they do not give off
their all to the work currently for the fear of being involved in an accident. In essence their commitment and enthusiasm levels on the job have dropped.

Even though most of the workers indicated that management always responds to accidents that happen at the dock area but they do not always get financial support for treatment or for upkeep when they are not working.

5.3 CONCLUSION

5.3.1 The nature of the OHSMS at the Tema Port

According to the findings the Tema Port has a number of measures in place which indicates that the organization is aware of the danger and hazards that workers are exposed to. These measures include OHS policies, training of workers on policies, protective clothing for workers, and financial support for workers who get injured or get involved in any form of accident at the port. These indicate that there is an OHSMS in place. These policies are known by most of the employees and training have been conducted for employees on the policies. However, there is no enforcement of the OHS policies in anyway; whether it is employees obliging to its instructions or management members doing their bit when there are safety issues to be addressed. In that regard the nature of the OHS management at the Tema Port is deemed poor.

5.3.2 Evaluation of the effectiveness of the OHSMS

The availability of an OHSMS does not mean the system is effective or it is doing what it is supposed to do. First and foremost, even though the port has policies on the health and safety of workers almost half of the responding workers said they do not know about the policies. On the other hand over a fifth of the workers have not had any training on these policies.
While it is possible that some of the workers may not be there when the training was conducted, it is the responsibility of management that, for the sake of the workers and the organization, all those working in areas which require understanding of safety and health issues be trained accordingly. Worse of all, those who mentioned that they know about the policies do not have detailed knowledge of it, in spite of their training.

A significant weakness to the Tema Port’s OHSMS is that, a large number of workers do not wear protective clothing even though their job requires them to do so. The unavailability of these protective clothing reveals that there is something wrong with the OHSMS at the Tema port. According to the workers, supervisors who are to ensure everybody is in protective clothing in the dock area do not ensure it happens. Then again, safety inspections are not done as and when they are supposed to be done.

The level of safety ratings at the Tema Port by the workers shows that most of the dockworkers feel unsafe even though they seem to be taking it for granted. In summary, considering the available responses from the dockworkers and the analyses of those workers, the available OHSMS for the Tema Port is not serving its rightful purpose.

5.3.3 The impact the OHSMS has on performance

With most of the workers considering leaving the dock work, it is an indication that the poor OHSMS is having a negative effective on employee motivation and enthusiasm towards their work. Their desire to leave is not necessarily because their incomes are low but because they feel something bad can happen to them. Also, a recognizable proportion does not seem to give much effort to their work. In situations like this, when workers cannot leave because they do not have other alternatives for income, they resort to pilfering and engaging in negative practices that contribute to the detriment of the image of the port as a whole.
Therefore a poor OHSMS eventually leads to poor performance among employees and overall poor performance of the Tema Port.

5.4 RECOMMENDATION

Maintenance audit should be done periodically on the equipment and machines that are being used by the port workers for their operations. This will ensure that faulty machines and systems are attended to so as to eliminate or reduce the likelihood of an accident being caused by these machines and equipment.

Education of port workers on the need to keep safety rules and regulations must be intensified and made a priority at all times. Safety warning signs must be placed at strategic locations within the port environment whiles worn out ones must be replaced to continually remind workers of safety precautions.

Laws enacted on OHS must be enforced. Then also, ILO Conventions 155 and 161, on which the labour Act 2003, Act 651 are built must be ratified. Indeed, the ratification of ILO conventions cannot be said to be the panacea to the numerous OHS issues that confront today's organisations. However, it sends a strong and clear message to investors and employers that the country attaches some importance to issues of OHS.

Economic incentives should be given to organizations that have put effective and adequate measures in place to ensure the safety of their employees. Such economic incentives could come in a form of tax reliefs or tax cuts. Recognitions in terms of awards should also be given to OHS sensitive organisations. This could be made to be a category in industry awards that are organized by various industries especially manufacturing and other organisations where the employee is often open to danger and other hazards.
Educational institutions should be encouraged to institute occupational health programmes so as to produce specialized professionals in the field of Occupational Health & Safety which is seriously lacking in the country. Records from the Ghana Health Service (GHS) indicates that there are only four occupational health physicians, one occupational health nurse and 34 trained factory inspectors. Therefore, this kind specialized training is very important.
REFERENCES


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APPENDIX

QUESTIONNAIRE

This questionnaire is being administered by a student of Regional Maritime University offering a program in MSc. Ports and Shipping Administration. The research topic is IMPROVING OCCUPATIONAL SAFETY OF DOCK WORKERS IN THE PORT OF TEM"A. All responses will be kept confidential and shall be for academic purpose only.

Please answer the questions with sincerity by ticking [✓] or filling in the spaces provided.

Demographics

1) Gender: Male [ ] Female [ ]

2) Age: 18-25 years [ ] 26-30 years [ ] 31-40 years [ ] 41-50 years [ ] 51 years+ [ ]

3) How long have you been working at the port?
   a) 0-6 months [ ] b) 7-11 months [ ] c) 1-3 years [ ] d) 4 years and over [ ]

Knowledge of policies and Training in safety at the port

4) Is there an Occupational Health and Safety Management policy available at the Port
   Yes [ ] No [ ]

5) Is this policy known to workers of the port?
   Yes [ ] No [ ]

6) I know much about the details of this policy
   Strongly disagree [ ] Disagree [ ] Neutral [ ] Agree [ ] Strongly Agree [ ]
7) Have you received any training on how to keep yourself safe from harm at the workplace?

Yes [ ]   No [ ]

8) Applying the health and safety training has been useful to me

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

Personal Protective Clothing

9) Does your job require you to wear safety and protective clothing, that is, personal protective devices?

Yes [ ]   No [ ]

10) Do you wear these personal protective devices when working every time?

Yes [ ]   No [ ]

11) If no why don’t you wear them?

........................................................................................................................................
........................................................................................................................................

12) Rate 1-7, 1 being highest and 7 lowest, the personal protective clothing that is most necessary for a dock worker?

Helmet [ ] Safety boots [ ] Face masks [ ] Goggles [ ] Protective suits [ ] Reflectors [ ] Gloves [ ]
Implementation and Enforcement of Health and safety rules and regulations

13) I feel obliged to observe the health and safety regulations that have been laid down by the port

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

14) I am aware that my health and safety is my responsibility

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

15) If there are no proper safety measures at the place of work I demand that from my supervisors

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

16) Supervisors make sure that the workers observe the safety rules and regulations

Yes [ ] No [ ]

17) Does the management of the port conduct safety inspections at the Tema Port?

Yes [ ] No [ ]

18) How often does the management of the port conduct safety inspections at the Tema Port?

Fortnightly [ ] Monthly [ ] Quarterly [ ] Half-yearly [ ] Yearly [ ]

19) Are forums organised to discuss the safety and health needs of the workers at the port.

Yes [ ] No [ ]

63
Causes of Workplace accidents

20) Have you ever experienced any accident in the workplace?

Yes [ ] No [ ]

21) What are some of the causes of workplace accidents for workers?


22) Have you experienced any illness that is related to the work you do?

Yes [ ] No [ ]

Impact of health and safety on the work performance of employees

23) I have thought of leaving the work because of the accidents that do happen there

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

24) I do not give my all during work with the fear that I might get an accident

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

Do you report incidents that happen at the dock during work?

Not at all [ ] Sometimes [ ] Always [ ]

25) Does the port or management support employees financially in case there is an accident?

Not at all [ ] Sometimes [ ] Always [ ]