OCCUPATIONAL HEALTH AND SAFETY OF THE INFORMAL SERVICE SECTOR IN THE SEKONDI-TAKORADI METROPOLITAN AREA

By

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DECLARATION

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

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ABSTRACT

The informal sector in Sub-Saharan Africa has become a growing source of employment for large numbers of youth, and also for older workers pursuing entrepreneurial goals and others adjusting to structural changes in the region's employment. Most informal activities are flexible, insecure, and hazardous and take place in unhealthy and unsafe environment. Ghana's annual occupational injury rates are about 11.5 injuries/1,000 persons in the urban areas and 44.9/1,000 in the rural areas.

The study therefore seeks to examine the nature and operations of the informal service sector and the key health and safety risks associated with the sector. It also seeks to assess the economic costs of the injuries and diseases and the interventions put in place by government, employers, and employees and finally make recommendations to inform policy.

With the Sekondi-Takoradi Metropolitan Area as a case study, 440 employers and employees made up of Drivers, Beauticians, Mechanics and Porters were interviewed. Data was analyzed using the Statistical Package for Social Scientist (version 17). Other source of data was basically secondary specifically from books, journals and other relevant publications.

The study revealed that the total economic costs of injuries and diseases among informal service workers in STMA was GH₵11,691.9 for the year 2010 and workers were exposed to a range of physical, ergonomic, chemical and psycho-social hazards. Despite these costs and level of exposure to hazards, 62.3 percent of the respondents had not registered under the National Health Insurance Scheme. Concerning Personal Protective Equipment (PPE), the survey revealed a collaborative effort between both employers and employees in their provision. It was also realised that Ghana has no Occupational Health and Safety (OHS) policy and the activities of OHS institutions were limited to the formal sector to the neglect of the informal sector and no compensations were paid to the workers in the sector. Furthermore, OHS institutions were under-resourced in terms of

human resource and other logistics which hindered their service delivery even to the formal sector.

It is therefore recommended that an OHS policy is formulated and intensive education through the media, undertaken to sensitize workers on their work environment and the level of risk exposure as well as the need to register under the NHIS. There is also the need for effective collaboration between all OHS institutions to ensure workers use the appropriate Personal Protective Equipment (PPE) to prevent injuries.

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LIST OF ACRONYMS

COI	Cost of illness
DFI	Department of Factories Inspectorate
ESCAP	Economic and Social Commission for Asia and the Pacific
EPA	Environmental Protection Agency
GDP	Gross Domestic Product
GNA	Ghana News Agency
GoA	Government of Armania
GHABA	Ghana Beauticians and Hairdressers Associations
GAG	Garages Association of Ghana
GPRTU	Ghana Private Road Transport Union
GHS	Ghana Health Service
HSE	Health and Safety Executive
IHO	International Health Organization
ILO	International Labour Organization
IRS	Internal Revenue Service
ISO	International Organization for Standardization
MMDA	Metropolitan, Municipal and District Assemblies
MTDP	Medium Term Development Plan
NHIS	National Health Insurance Scheme
NIHL	Noise-Induced Hearing Loss
NIOH	National Institute of Occupational Health
OHS	Occupational Health and Safety
OSHA	Occupational Safety and Health Authority

PHC	Population Housing and Census
PPE	Personal Protective Equipment
SPSS	Statistical Package for Social Scientists
SSNIT	Social Security and National Insurance Trust
TUC	Trade Union Congress
UNCED	United Nations Conference on Environment and Development
WAMCO	West African Mills Company
WHO	World Health Organization
WTP	Willingness-To-Pay

CHAPTER ONE

OVERVIEW OF THE STUDY

1.0 Introduction

The informal sector since the early 1970's has been the focus of increasing attention in international discussions on economic development. The International Labour Organization has played a major role in understanding the phenomenon and in formulating policies governing the sector. Their traditional policy advocated and implemented, adopted a positive and integrated approach, combining the promotion of productive potential and employment in the sector and the improvement in the welfare of the groups concerned through the establishment of appropriate protective measures (ILO, 2002).

The informal sector in Sub-Saharan Africa has become a growing source of employment for large numbers of youth, and also for older workers pursuing entrepreneurial goals and others adjusting to structural changes in the region's employment (ILO, 2002).

Fox and Gaal (2008) observed that initially the sector was viewed as a safety net for those unable to find employment in the modern sector, this image of the sector however has changed with time. People now view the informal sector not as a temporary stop while searching for employment in the formal wage economy, but as a preferred destination offering opportunities to those wanting to become entrepreneurs.

Ghana has a large informal sector which constitutes 70 percent of its 7.7 million labour force. This sector consists of varied small and micro scale industries (Clarke, 2005). Numerous injuries and diseases are associated with work in the informal sector which affects staff attendance and service delivery. These include communicable diseases, schistosomiasis, malaria and HIV/AIDS which is particularly associated with mining and the transport sector. Non-communicable diseases widespread in the informal service sector include Noise-Induced Hearing Loss (NIHL), chemical poisoning, stress and

occupational asthma. Considering the risk involved in the informal sector, there is the need for a comprehensive provision of occupational health services (OHS) for the well-being of workers in the sector (Deacon, 2003).

The World Health Organisation (WHO, 1994) analyzing some of the aforementioned problems concluded that the occupational health and safety of working people are crucial pre-requisites for productivity and are of utmost importance for all socio-economic and sustainable development.

1.1 Problem Statement

The health status of the workforce in every country has an immediate and direct impact on national and world economies. Total economic losses due to occupational illnesses and injuries are enormous (WHO 1999). The overall economic losses resulting from work-related diseases and injuries in Britain between 2005 and 2006 ranged between £2.9 to £3.2 billon (Pathak, 2008).

The informal sector is extremely heterogeneous because of the diversity in the activities they undertake. Many informal jobs are not only "flexible, precarious and insecure," but are also hazardous and take place in settings which are both unhealthy and unsafe. Such work environments can include waste dumps, informal market areas, roadsides and poorly serviced homes, all of which can expose the workers who work in them to environmental disease, traffic accidents, fire hazards, crime and assault and weather related discomfort. With respect to working conditions, informal workers who are employees usually suffer from exploitation in the form of long working hours, a lack of holidays, minimal job security or generally low wages (Alfers, 2009)

ILO (1996) estimates show that two million women and men worldwide die each year as a result of occupational accidents and work-related illnesses. WHO estimates that 160 million new cases of work-related illnesses occur every year, and stipulates that

workplace conditions account for over a third of back pain, 16 percent of hearing loss, nearly ten percent of lung cancer; and that eight percent of the burden of depression can be attributed to workplace risk (Biddle, 2001).

Ghana's annual occupational injury rates are about 11.5 injuries/1,000 persons in the urban areas and 44.9/1,000 in the rural areas. Occupational injuries have higher mortality, longer disability, and higher treatment costs than non-occupational injuries. About 12.7 percent of drivers and 19.4 percent of traders get involved in road-traffic related injuries every year (Mock et.al, 2005).

A report by Ghana News Agency (2003) stated emphatically that occupational injuries, accidents and diseases cost Ghana as much as seven percent of GDP. According to Atim *et al*., (2009) despite these problems, informal workers have more often been ignored in the design of national social protection schemes in Ghana.

The major Ghanaian retirement insurance body, the Social Security and National Insurance Trust (SSNIT), was for many years accessible only to formal workers. Informal workers have therefore had to rely solely on informal social protection mechanisms until recently the well organized informal occupations were given some due attention and recognition regarding social security.

Although the National Health Insurance Scheme introduced in 2003 represents a major step forward in acknowledging the health needs of informal workers in Ghana in terms of access to curative care, little attention has been given to the preventive health needs of informal workers in the design of social protection schemes or in national policy (Atim et al, 2009).

Most researches (Adei and Kunfah, 2007; Alfers, 2009; Adu-Amakwah, 1999) have revealed that Ghana has no national policy on Occupational Health and Safety (OHS). A draft policy document prepared in 2004 has not even been processed for adoption, though article 4 of the International Health Organization (IHO) convention 155 (Occupational

Safety and Health Convention, 1981) requires the nation to give effect to the provisions of this convention. The current national labor Act 651 does not also include any comprehensive provisions on OHS.

According to Clarke (2005), there is also an acute shortage of OHS training programmes. The School of Public Health is struggling to institute an occupational health programme. In the light of this, it is estimated that the proportion of workers who receive comprehensive OHS in the sector is likely to be constituted by not more than one to two percent of workers even being found in the organized informal sector.

Considering the above problems, the study therefore seeks to assess Occupational Health and Safety (OHS) issues of the informal service sector in the Sekondi-Takoradi Metropolis.

1.2 Research Questions

The study seeks to answer the following questions:

- What is the nature and operations of the informal service sector in STMA?
- What are the key health and safety risks faced by employees in the informal service sector?
- What is the economic cost of occupational injuries and diseases of the informal service sector?
- What measures have been put in place by government, employers and employees to manage workplace risks?
- What should be the government's policy focus on health and safety for the informal service sector?

1.3 Objectives of the Study

The broad objective of the study is to assess health and safety issues regarding informal activities in STMA

The specific objectives of the study are to:

2. examine the nature and operations of the informal service sector in STMA;
3. assess key health and safety risks associated with the informal service sector;
4. assess the economic costs of occupational injuries and diseases in the informal service sector;
5. identify interventions by government, employers and employees who manage risks at workplaces; and
6. make recommendations to inform policy.

1.4 Justification

The traditional sectors of agriculture and industry in Ghana have lost out to the service sector in terms of contribution to GDP. The 2011 budget and financial statement shows agriculture and industrial growth as 4.8 percent and 6.0 percent respectively compared to 8.2 percent growth in the service sector for the year 2010 (MOFEP, 2011).

The service sector in the Sekondi – Takoradi Metropolitan Area is the largest employer of the labour force in the metropolis. It employs 59.9 percent of the active labour force and more than 45 percent can be accounted for in the informal sector (STMA, 2011). On the whole the informal service sector dominates informal activities making up 59.7 percent of all informal activities (GSS, 2001).

Despite immense contribution of the sector to the development of the metropolis and the nation as a whole, very little has been done concerning the health of its workers.

Thus, the study seeks to ascertain occupational hazards associated with informal activities especially that of the service sector. Findings of the study will educate people on the extent to which OHS issues impact on the development of the economy. It will also expand the knowledge base of policy makers to formulate appropriate policies that will ensure the health and safety of workers.

1.5 Scope

Conceptually, the study focused on the pertinent issues of OHS of the operations of people in the informal service sector in Sekondi and Takoradi Metropolitan Area. In more specific terms the following categories of workers were studied;

- Beauticians
- Garages: auto mechanics, sprayers, welders, vulcanizers,
- Drivers
- Porters (Kayaye)

The above categories of workers were selected because they are considered to be prone to a number of occupational hazards. The study therefore considered the risks each of the category faced considering their work environment, gender and their work demands. The study also reviewed various policies and laws that make provision for health and safety to find out possible reasons why they are not being implemented.

Geographically, the study was limited to the Sekondi-Takoradi Metropolitan Area in the Western Region of Ghana because it is the third largest region in the country. It is also one of the active areas with a relatively large commercial centre (Market Circle).

The time scope of the study spanned between the early 1980's where informal activities became pronounce to date. This time frame also helped to study the trend of growth of the informal service sector.

1.6 Organization of the study

The study was organized into five chapters. Chapter one focused on the general overview of the study comprising the introduction to the study, problem statement, research questions, research objectives, methodology and the scope of the study. Chapter two reviewed literature on the concept of Occupational Health and Safety, the occupational health hazards associated with the informal service sector globally and locally, the economic and social cost of injuries and diseases of the sector and the international laws and conventions governing informal operations. It also presents a conceptual framework

which gave a summary of the entire review and also served as a baseline for the generation of questionnaire. Chapter three presents the profile of the study area to provide a basis for understanding the study components. A detailed research methodology was also undertaken. In chapter four, results of data collected was analyzed and presented. The major findings, recommendations and conclusions were the focus of chapter five.

CHAPTER TWO

HEALTH AND SAFETY OF THE INFORMAL SERVICE SECTOR

2.0 Introduction

The chapter reviews available literature on the concept of Occupational Health and Safety (OHS), informal sector, occupational risks and hazards, approaches to improving OHS, International and local legislations on OHS, case studies of OHS practices in the informal sector and a conceptual framework on the need for workplace health and safety.

2.1 The Concept of Occupational Health Safety (OHS)

Occupational health and safety according to the Wikipedia dictionary is a cross-disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment. The goal of all occupational health and safety programs is to foster a safe work environment.

The International Labour Organization (ILO, 1996) defines occupational health and safety as a discipline with a broad scope involving many specialized fields. In its broadest sense, it aims at:

- the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations;
- the prevention among workers of adverse effects on health caused by their working conditions;
- the protection of workers in their employment from risks resulting from factors adverse to health;
- the placing and maintenance of workers in an occupational environment adapted to physical and mental needs; and
- the adaptation of work to humans.

In other words, occupational health and safety encompasses the social, mental and physical wellbeing of workers. Successful occupational health and safety practice

requires the collaboration and participation of both employers and workers in health and safety programmes, and involves the consideration of issues relating to occupational medicine, industrial hygiene, toxicology, education, engineering safety, ergonomics, psychology, among others.

Occupational health issues are often given less attention than occupational safety issues because the former are generally more difficult to confront. However, when health is addressed, so is safety, because a healthy workplace is by definition also a safe workplace.

A healthy workplace by WHO's definition is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and well-being of workers and the sustainability of the workplace by considering the following, based on identified needs:

- health and safety concerns in the physical work environment;
- health, safety and well-being concerns in the psychosocial work environment including organization of work and workplace culture;
- personal health resources in the workplace; and
- ways of participating in the community to improve the health of workers, their families and other members of the community (WHO, 1999).

2.2 Informal Sector

It is much easier to describe the informal sector than to provide an exact definition of it. The informal sector is a visible and unyielding phenomenon characterizing the space economy of cities of the developing world (Afrane, 2007).

In a report by Economic and Social Commission for Asia and the Pacific (ESCAP, 2006), the fifteenth International Conference of Labour Statisticians defined the informal sector as "all unregistered or unincorporated enterprises below a certain size, including:

microenterprises owned by informal employers who hire one or more employees on a continuing basis; and own-account operations owned by individuals who may employ contributing family.

The above definition seems to be widely accepted since most definitions stem out of it. Burton (2009) equally perceives the informal sector as the non-regulated labour markets, which usually involves workers with unwritten arrangements with an employer, and who are not documented as workers in government records. In many countries entitlement for social benefits (such as sick or maternity leave, paid retirement, or access to health care), and applicability of legal rules (such as limits on work hours, minimum wage) require a formal job contract. In Ghana, the sector can be categorized into two; the rural informal and the urban informal (Adu-Amankwah, 2007).

The rural informal sector can be categorized into agricultural activities, fishing and fish processing activities, rural agro-based processing activities and forest product workers. (ESCAP, 2006)

The urban informal sector in Ghana, according to Adu-Amankwah (2007), is remarkable for its heterogeneity and variety. Studies on the urban informal sector in Ghana reveal a wide range of operations that can be grouped under services (Urban food traders and processors, Health and sanitation workers, Domestic workers, Garages, Graphic designers, Audio-visual workers, Hairdressers and barbers/private), construction and manufacturing.

2.3 Occupational Risks and Hazards in the Informal Service Sector

There are an unlimited number of hazards that can be found in almost any workplace and are caused by obvious unsafe working conditions, such as unguarded machinery, slippery floors or inadequate fire precautions. These insidious hazards (that is, those hazards that are dangerous but which may not be obvious) may be classified as follows:

- chemical hazards; arising from liquids, solids, dusts, fumes, vapours and gases;

- physical hazards; such as noise, vibration, fire, poor sanitation radiation and extreme temperatures;
- biological hazards; such as bacteria, viruses, infectious waste and infestations;
- psychological hazards; resulting from stress and strain;
- hazards associated with the non-application of ergonomic principles, for example badly designed machinery, mechanical devices and tools used by workers, improper seating and workstation design, or poorly designed work practices. (Mock et al, 2005)

Most workers are faced with a combination of these hazards at work. Some of the hazards that apply to the service sector are explained below:

2.3.1 Fire

Fires are one of the most prominent health and safety hazards faced by the service sector. This is usually associated with traders in markets as well as the garages. The Ghana News Agency (GNA, 2009), announced that Ghana's biggest market, Kumasi Central Market, was gutted by a fire which was estimated to have destroyed over 400 market stalls, as well as a significant amount of goods and cash. The Takoradi Market Circle has also suffered a number of devastating fires which did not only destroy goods but human lives as well. The fires are often blamed on food sellers who use open flames to cook or smoke fish sellers and leave smouldering ashes under their fish overnight. Sometimes electrical faults appear to be the cause.

While some fires start out small, their severity is often exacerbated by a number of factors to do with the infrastructure, planning and design of the place. Many market stalls are constructed from wood, which makes them highly flammable. The Metro Fire Services also complain that access routes to the market are often blocked by the ad hoc placement of stalls and goods, which means that it can take a long time for firemen to reach the fire. Once at the fire, the firemen then have the problem of trying to access water. In Ghana, there are no easily accessible fire hydrants in most public markets. This is because they have either been covered up by rubble, stalls and goods, or they have

been sealed off by the private water companies who control water supply. The public markets also lack fire extinguishers, despite the fact that Ghana's National Building Regulations require local government to provide these in all official public markets. Also, the Factories Offices and Shop Act 1970, ACT 328 establishes that there shall be an appropriate means of fighting fire in every factory, office and shop in Ghana (Alfers, 2009).

2.3.2 Poor sanitation

Problems with sanitation very visibly affect most of service workers, especially those in the markets and along the roads. Plastic 'pure water' bags, off cuts from fish and meat, fruit peels, and debris clog many of the drainage gutters. These clogged gutters become breeding places for disease vectors, and the smell emanating from them can be intolerable.

A large part of the sanitation problem relates to the inadequate provision of refuse removal points within working areas. However, the fact that official refuse removal points are so sparse certainly means that many people, including traders and customers are far more likely to dispose of their waste in gutters, rather than carry it to a far less accessible central container. Another factor that makes sanitation a problem is the lack of cleaning personnel working in markets, and a lack of adequate cleaning equipment. Sanitation problems are also exacerbated by the lack of accessible running water, as well as inadequate toilet facilities have the highest tendency of causing malaria and diarrhoea, musculo-skeletal pain, dehydration, and headaches (Avotri and Walters, 1999).

2.3.3 Psychosocial Hazards

Working conditions do not only have physical effects on workers but there are psychological repercussions too which usually result in social and mental problems. According to OATUU (2003), psychosocial hazards cause fatigue, stress and general loss of interest in work. Monotonous work which requires constant concentration, irregular working hours and work carried out at risk of violence (for example, harassment from

local government officials and the police) can also have adverse psychological effects. Psychological stress and overload have been associated with sleep disturbances, burn-out syndromes and depression. Epidemiological evidence exists of an elevated risk of cardiovascular disorders, particularly coronary heart disease and hypertension in association with work stress. Severe psychological conditions (psychotraumas) have been observed among workers involved in serious catastrophes or major accidents (drivers and mechanics) during which human lives have been threatened or lost.

The lack of adequate security in jobs and the presence of criminal elements also decrease the sense of physical security felt by workers (Johnstone et al, 2008).

2.3.4 Noise

The Canadian Centre for Occupational Health and Safety identifies noise as one of the most common occupational health hazards. In heavy industrial and manufacturing environments, as well as in farms, cafeterias, permanent hearing loss is the main health concern. Noise, vibration, ionizing and non-ionizing radiation can all affect health adversely. Between 10 and 30 percent of the workforce in developed countries, and up to 80 percent of the workforce in developing are exposed to noise. Noise-induced hearing loss is one of the most prevalent occupational health effects in garages and construction works. The generally acceptable level of noise which is potentially damaging and result in deafness is 85dBA (Amedofu, 2002). It is therefore necessary to control noise by the use of ear plugs and ensuring workers are not exposed to noise for long hours.

2.3.5 Chemical Hazards

About 100,000 different chemical products are in use in modern work environments and the number is growing (SmartName, 2011). High exposures to chemical hazards are most prevalent in industries that process chemicals and metals, in the manufacture of certain consumer goods, in the production of textiles and artificial fibers, and in the construction industry. Chemicals are also increasingly used in virtually all types of work, including non-industrial activities such as hospital and office work, cleaning, and provision of cosmetic and beauty services. Health effects chemicals include metal poisoning, damage

to the central nervous system and liver (caused by exposure to solvents), dermal and respiratory allergies, cancers and reproductive disorders. **(**US EPA, 2010**)**

2.3.6 Ergonomic Hazards

Approximately 30 percent of the workforce in developed countries and between 50 percent and 70 percent in developing countries are exposed to a heavy physical workload or ergonomically poor working conditions, involving much lifting and moving of heavy items, or repetitive manual tasks. Repetitive tasks and static muscular load are also common among many industrial and service occupations and can lead to injuries and musculoskeletal disorders. In most developing countries such disorders are the main cause of both short-term and permanent work disability and lead to economic losses amounting to as much as 5 percent of Gross National Product (GNP) (Margottini, 2007).

2.3.7 Occupational Health Impacts

The great variety of occupational health hazards makes quantification of their associated health risks and impacts at the global level very difficult. Some estimates have been based on the occupational injuries and diseases reported in official statistics notably ILO and World Bank documents. But a large number of injuries and diseases caused by workplace hazards are not reported (Joubert, 2002).

Due to the changes in occupational distribution with development, many countries have experienced a shift from the hazards that characterize work in agriculture, mining and other primary industries, to those of manufacturing industries or service industries. Following such a shift, occupational injuries and diseases could be expected to fall in number and the severity of those that do occur to be less. But, in fact, new occupational disease problems have emerged, leading to an increased incidence of reported occupational disease in certain developed countries. Occupational injuries and diseases have both social and economic costs, their determination of which is in the next section.

2.4 Theoretical Models for Economic Cost of Occupational Injuries and Diseases

Calculations of economic loss or burden can be based on a number of theoretical models. There is no definite model considered as the best among economists or policy analysts. Two approaches have been reviewed by Biddle (2001), and are considered dominant among the methods used to calculate the costs of injury, illness, or premature death: Cost-of-illness and willingness-to-pay. Both methods have strengths and weaknesses. The theories underlying the approaches as well as their strengths and weaknesses and other approaches are discussed below:

2.4.1 Cost-Of-Illness

The Cost-of-illness (COI) method estimates the value of an occupational injury, illness, or fatality by summing the value of two components: direct and indirect costs. Direct costs consist of the actual dollar expenditures associated with the injury or illness and include the value of all goods, services, and other resources that are consumed. They are the value of those resources that could have been used elsewhere if the injury or illness had not occurred. The most prominent direct costs are health care costs, which include physician's visits, prescription medicines, physical therapy, ambulance service, and hospitalization fees. Other direct costs include insurance administration costs, vocational rehabilitation, attendant care, and nursing home expenditures. These costs can be incurred in the present time or at some point in the future.

There are three primary approaches to estimate indirect costs: the friction cost method, the human capital method, and the willingness to pay method.

2.4.2 Willingness to Pay Method

The willingness to pay approach measures the amount an individual would pay to reduce the probability of illness or mortality. There are various methods of determining an

individual's willingness to pay, including surveys, examining the additional wages for jobs with high risks, examining the demand for products that lead to greater health or safety (e.g. seatbelts), and other related methods (Dorman, 1996)

An underlying assumption of this theory is that workers in the labor market know and understand the risks associated with jobs and that they will undertake only the jobs that are within the limits of their risk tolerance. This implies that workers are willing to accept a certain level of job-related risk in return for a specific level of compensation. Additionally, a perfectly competitive labor market would require establishment of equilibrium prices for each job characteristic that is equal to its marginal cost (Biddle 2001).

Individual worker preferences are partially determined by the labor market's demand for their particular skills. Job characteristics affecting safety levels include the fatality risk of the job, the nonfatal risk of the job, worker compensation benefits that are payable in case of injury on the job, and annuity benefits that are payable in the event of a fatal accident. The individual worker preferences and job-related characteristics combined with labor supply and demand create the wage premiums observed in the market.

The model assumes that all workers have identical skills and preferences, the unit cost of furnishing occupational safety is constant and exogenous, worker utility functions are well-behaved (exhibiting appropriate separability and diminishing marginal returns), all relevant information is available to all parties without cost, and nothing is lost by considering a given firm in isolation from the rest of the economy (partial equilibrium).
The individual's utility function (*u)* begins as follows:

$u=u\ (w,s)\ uw,\ us>0$ (1)

Where *w* is the compensation received

s is the safety level on the job.

Labor market analysis requires that employers provide each worker with the same level of utility based on the "going rate"; therefore, $u = u0$ for all workers. At the same time, firms seek to set employment and output levels to maximize profit. Given output levels, this is an optimal way to minimize labor costs subject to the utility constraint, $u = u0$. Regardless of the number of workers an employer chooses to hire, each employer must solve the following constrained minimization equation:

$$\min Z = w + ks + 8(u0 - u[w,s]) \quad (2)$$

where k is the constant unit cost of s per worker. Minimizing over w and s and rearranging the terms of the first order conditions yields the characteristic result.

The left side of this equation is the ratio of the marginal utility an employee would obtain from an increase in earnings to the marginal utility of an increase in safety. The right side of the equation is the cost of a unit increase in wages to the employer divided by the cost of supplying one unit increase in safety. The ratio of marginal costs equals the ratio of the marginal utilities. Furthermore, the first of these is the slope of a line for the tradeoff between wages and safety for a specified level of employer expenses. The latter is the slope of a worker's indifference (equal utility).

The major problem involved in this method is gaining access to micro-level data, required to accurately calculate compensating wage differentials this usually hinders the acceptance of estimations generated using this approach. Ideally, subjective measures of risk would be reflected from the employee's and the employer's viewpoints for each job. The normal proxy is to use national data sets that provide information on several thousand workers and their occupations (Kuchler & Golan, 1999).

According to Viscusi (1993) and Fisher et al. (1989), the most successful applications of the compensating wage approach are empirical studies that include detailed worker and job characteristic variables, especially those that measure specific job-related risk (as opposed to occupational-related risk or general categories of risk).

Critics of this approach (Kuchler & Golan, 1999) argue that its assumptions concerning the labor market do not reflect characteristics of the actual labor market. The compensating wage method assumes that workers have complete information concerning the extent and consequences of on-the-job risks, that labor markets are strictly competitive, and that insurance markets are actuarially correct so that risks can be accurately assessed.

Also, it does not consistently account for confounding job characteristics, such as prestige of the firm or job title, alternative work schedules, and a workplace focused on insuring quality of work life that some workers may substitute for wages to compensate for risk.

Furthermore, compensating wage models consider all risks to be the same. It can be argued that not all fatality risks represent the same utility loss. For instance, a worker may view death by fire as much more painful than immediate death in a motor vehicle incident, thereby creating different values for those deaths. People are usually less willing to accept involuntary risk than risk that is voluntarily assumed through contract of employment. Consequently, compensating-wage studies probably underestimate society's aversion to risk that is not contracted for. The most common criticism of compensating-wage approaches is that comparison of studies is almost impossible because of heterogeneity problems. This stems partly, from the large fluctuations in value of life estimates generated within the typical population. Therefore the application of the results of a compensating-wage study to the general population is inappropriate.

The most striking observation that emerges from the compensating wage literature is the sensitivity of value-of-life estimates to the characteristics of the study population and to the level and type of risk. As a result, the general applicability of these estimates is questionable.

2.4.3 Human Capital Method

Briggs (1999) views the human capital method as one that measures the lost of production, in terms of lost earnings, of a patient or caregiver. For mortality or permanent disability costs, the approach multiplies the earnings lost at each age by the probability of living to that age. The earnings in future years are discounted and often a one percent real annual growth rate in earnings is assumed. The human capital approach often includes the value of household work, usually valued as the opportunity cost of hiring a replacement from the labour

2.4.4 Friction Cost Method

A related method, the friction cost method, measures only the production losses during the time it takes to replace a worker. This approach assumes that short-term work losses can be made up by an employee and the loss of an employee only results in costs in the time it takes a new employee to be hired and trained, known as the friction period. Benichou (2001)

2.4.5 Advantages and Limitations of the Methods

The human capital method, according to Benichou (2001), is the most common approach used to calculate the indirect costs of an illness. A criticism of this approach is that certain groups are assigned a higher value than others. This is because the human capital approach uses wage rates and employment rates (often by age, sex, or race), so certain groups that earn less are consequently assigned a lower value.

Also, the willingness to pay approach attempts to ameliorate these problems, however, this approach is often difficult to implement in cost-of-illness studies. For specific diseases, extensive surveys of people's preferences are needed, although the results rely heavily on people's responses to very specific hypothetical questions about their

willingness to avoid certain illnesses. For communicable diseases, surveys may not fully capture the cost of the disease because of externalities. People only take into account the cost to themselves, without taking into account the societal benefit that having fewer people with a communicable disease benefits everybody because the disease is less likely to spread. Thus, the willingness to pay method is often not feasible for a cost-of-illness study (Kuchler & Golan, 1999).

Kirschstein (2000) criticizes the human capital method for overvaluing the indirect costs, claiming that the productivity losses are often eliminated after a new employee is trained and can replace the former employee. However, the friction cost method is rarely used because it requires extensive data to attempt to estimate only the losses in the friction period. Valuation of the productivity losses is complicated further by firms' use of internal reserves of labor during the friction period, which lowers the estimates of losses even more but can be difficult to calculate.

Considering such variations, it should be clear which method is used to estimate indirect costs, especially with the impact indirect costs can have on the total costs of illness.

2.5 Occupational Health Management

Occupational health case management is actually a system that tracks each incident that relates to employee health and safety. It integrates the entire plan of an organization into a unified whole that assumes complete responsibility for each employee. This means that it is concerned with prevention as it is with health care after an accident. The goal of Occupational Health and Safety is to do everything that can be done to prevent accidents and minimize illness. Ultimately, that is all that can be done, but it is also considerably more than has been done in the past (Cruickshank, 2010).

In occupational health case theory, the work environment is the first line of defense for worker health and safety. Compliance with Occupational Safety and Health Authority (OSHA) standards is taken for granted, but that is often the starting point for safety.

Constant monitoring and auditing of the safety conditions of the workplace is essential. This monitoring includes the individual employee. A health record can be kept on the employee as part of their other employment records. This process starts with a physical examination appropriate to the type of work that is done. It would be followed up by routine safety meetings stressing health related issues such as safety gear and proper lifting techniques (ILO, 2001).

When a health issue develops, either as a result of illness or accident, the employee must be covered by a health plan that is part of the overall health care system. These selected health care providers must do more than just provide "medical insurance". They must also be aware of the health and safety situation of the employer as well as the employee. Careful follow up and record keeping of every health situation can provide ideas for improving the environment for others. Occupational health should no longer be taken for granted, but rather be managed and controlled for success in organizations (Cruickshank, 2010).

2.6 Roles and Responsibility in Occupational Health and Safety

The occupational health and safety of employees and visitors to workplace is an important issue for both employees and employers. Doan (2001)

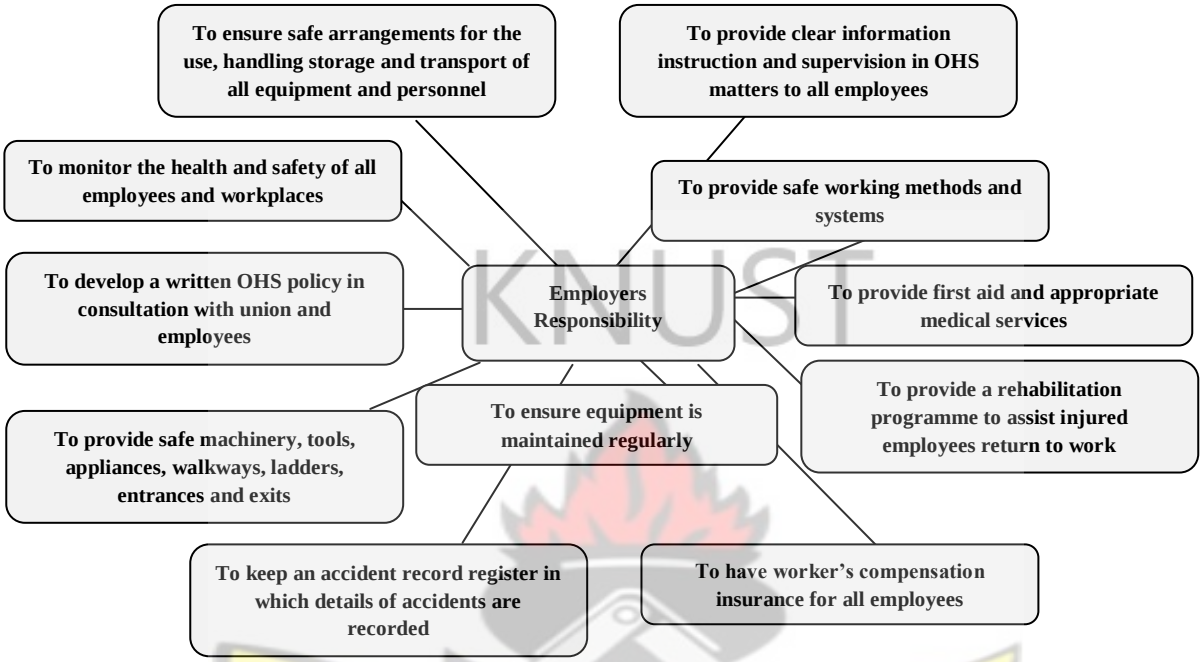
2.6.1 Employer's Role

According to GoA (2008), employers have the obligation to ensure that all their employees are protected from health and safety risks arising out of their work activities. This implies they have to:

- Provide and maintain safe systems of work
- Make arrangements for ensuring the safe use, handling, storage and transport of equipment or substances
- Provide necessary information, instruction, training and supervision.

Figure 2.1 outlines detail responsibilities of the employer

Fig. 2.1 Employers Role in Occupational Health and Safety



Source: Clewett (2008)

An integral part of an employer's duty is to engage in risk management processes in the workplace. This is a system which identifies the occupational health and safety risks that are relevant to a particular workplace. A risk management system should be flexible and up-to-date to reflect the safety issues associated with a company's daily operations. A risk management system involves identifying hazards, assessing risks, controlling the risks and reporting accidents (Doan, 2001).

2.6.2 Employee's Role

The roles of employers need to be complemented by employees. Specifically, they are supposed to work in a safe manner, be safety conscious on their jobs and co-operate with their employers in the health and safety measures they put in place. They must also work safely to protect themselves and others from injury (GoA, 2008). For example, they must not:

- Move or deface signs
- Tamper with machine guards
- Behave in a way that puts others at risk.

All employees share equal responsibility and so must obey all health and safety procedures, including correctly wearing all personal protective equipment provided. They should also know emergency procedures, the location of the first aid kit and report any workplace hazards to employers (OHS Act, 2000).

2.7 Approaches to Improving Occupational Health and Safety

There are many different systems for supervising and improving occupational safety and health. Gustavsen (1996) in his study identified three categories of improving OHS namely; A specification model- where laws and regulations are at the core and where the main actors are various types of experts. In Sweden, for example, the Working Environment Act provides for the establishment of a safety committee that plans and supervises safety activities. It also provides for the appointment of one or more workers' safety delegates who have wide powers of inspection and access to information. This combined force is authorized to order work to be suspended when it considers a situation to be dangerous, pending a ruling by the labour inspection service and despite opposition by the employer. No penalty can be imposed on a safety delegate whose decision to have the work suspended is not confirmed by the labour inspector, and the employer cannot claim any compensation for the suspension from the safety delegate or trade union organization.

A procedure-based model- where the potential of a rational systems approach is at the core and the line organization is the main actor, e.g. internal control. In principle, it is a system for monitoring the work environment and for defining remedial action, with a strong resemblance to modern quality control systems (Gustavsen, 1996). The idea is to identify errors and rely on the ordinary line organisation to correct them. Essentially, the point is to bring health and safety into the orbit of ordinary managerial concerns and

actions. In return for this involvement, management is given a certain authority to use its own discretion in defining problems and priorities. The role of the labour inspection is defined as systems supervision where the primary point is to ensure that each enterprise has an adequate system in place. In general, it would seem that the participation of workers in the inspection of working conditions and the working environment will continue to increase, particularly in countries that have introduced "self -inspection regimes" or internal control was introduced in Norway and Sweden during the 1990´s. Such regimes depend, however, on effective and aggressive workers' organizations and their active involvement in the audit process at the enterprise level, which is the centre-piece of any such "self inspection".

A developmental model- where the principle of continuous improvement is at the core and the activity is distributed as widely throughout the whole organization as possible. Does the continuous improvement approach give advantages lacking in the two other approaches? Gustavsen (1996) once again argues that it does, this was based on a study of about 1300 Swedish workplaces. The study suggested that if there is broad active involvement, there will be strong positive improvements in work environment conditions as well as in productivity. When health and safety was part of an overall process of improvement and integrated with efforts to promote productivity there was a clear management motivation. The idea of continuous improvement is widespread in working life today. Originally introduced by the Japanese, it has become a globally accepted practice and in most versions active participation from all concerned is a part of the concept. In sum, all three approaches described above are important. While expert competence is necessary in dealing with, for instance potentially toxic substances, work postures can hardly be changed without some kind of participation from those concerned.

2.8 Case Study of Successful Safety Programmes

2.8.1 Thailand's Participatory Approach

A report by Manothum and Rukijkanpanich (2005) indicated that more than 24.1 million people work in Thailand's informal sector. Among these workers, 4.2 million of them have experienced injuries or accidents. The majority (2.8 million) of these injured workers were cut or wounded by sharp materials. Five hundred and twenty nine thousand (529,000) had fallen from heights. Three hundred and thirty two thousand (332,000) were injured from being hit by machineries or tools in their workplaces. One hundred and ninety five thousand (195,000) were injured in automobile accidents. Sixty five thousand (65,000) informal sector workers had been exposed to chemical substances.

In general, the stakeholders in informal sectors, especially the workers, had insufficient concepts and impractical guidelines concerning how to handle OHS problems appropriately. Therefore, the development of a participatory process was extremely necessary for preventing future problems and decreasing the health effects caused by work hazards in the informal sector.

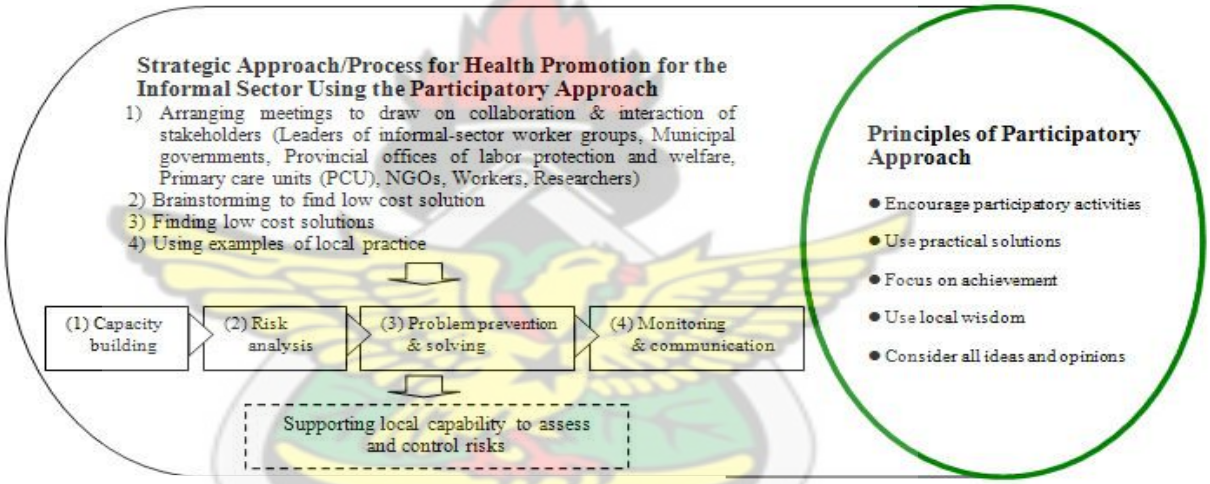
A participatory approach was considered an effective strategy in solving OHS problems and appropriate for use with informal sector workers. During the process of model development, steps were taken to motivate the workers to participate as much as possible. Also, in the process of model development, the researchers placed a high value on the community's culture in each target area. This process of promoting OHS management was developed with the cooperation and participation of local networks. Local network participation included collaboration and interaction between stakeholders. All steps of the participatory process aimed at increasing the workers' self development related to health and safety. Four processes were used:

- capacity building: its objective is to help informal sector workers learn concepts for improving work conditions

- ❖ risk analysis: its objective is to facilitate informal sector workers' understanding of the risk factors associated with their occupations,
- ❖ Problem prevention and solving: its objective is to engage the informal sector workers in improving working conditions, and
- ❖ Monitoring and communication: its objective is to confirm benefits and sustain the problem solving activities.

The model in Figure 2.2 was used to ensure the effectiveness of the process.

Fig. 2.2 Principles of Thailand's Participatory Approach



Source: Manothum and Rukijkanpanich (2005)

During the participatory learning activities, the informal-sector workers engaged in the group discussions and identified the OHS problems in their own sector. They subsequently attempted and accurately understood work related safety issues, and collectively proposed and implemented safety measures.

After implementation of the participatory process above, the results showed that the post-test average score of the OHS knowledge, attitude and behaviors, and the work practice improvement of informal-sector workers were significantly higher than their pre-test average scores ($p < 0.05$). In respect to the working condition measurements, the

participatory process demonstrated its ability to improve working conditions to meet necessary standards. The OHS knowledge, attitude and behavior scores of the informal sector workers were increased because the workers were exposed to the capacity building component of the participatory process. The capacity building process enabled the workers to recognize risks associated with their occupation and therefore implement safety measures by using PPE and by learning about safety improvement concepts.

2.8.2 Australia's Training and Sensitization

A study by Cooke (1999) sought to develop OHS performance indicators for the informal workers in Australia. The construction industry was chosen as the most appropriate industry because it was identified to be diverse in nature. Its diversity cuts across the different types of hazards experienced in different construction projects and the numerous work practices adopted to perform a variety of tasks in different sectors of the construction industry. The industry is also reasonably standard across jurisdictions in Australia and was appropriate for the development of performance measures at the workplace level and had scope for significant improvement with workplace-based interventions.

During 1989 to 1992, there were 256 persons who were fatally injured as a result of construction activities in Australia. Of these 256 persons, 232 were workers who were employed in the construction industry, 18 were persons who were working, but who were not employed in the construction industry, but were fatally injured on a construction site and six were persons who were fatally injured as bystanders to construction work.

Workers who were employed in the construction industry (excluding commuting deaths) had a fatality incidence rate of 10.4 per 100,000 workers per year during 1989 to 1992. This figure is a decrease from the previous national work-related fatalities study for the 1982 to 1984 period that reported a fatality incidence of 14.1 per 100,000 workers per

year. The fatality rate for 1998 was 5.5 deaths per 100,000 person and equate to 58 workers employed in the construction industry being fatally injured at work each year.

Working groups consisting of OHS staff and representatives of the industry, unions, state-based OHS agencies and the Department of Employment Workplace Relations and Small Business was formed. The working groups were sensitized and trained on the need for OHS interventions in the construction industry. As a result, the construction industry was divided into four sectors, for the development of OHS performance indicators. These four sectors were:

- Commercial construction (for example, factories; high rise apartments);
- Civil construction (for example, roads; bridges);
- Heavy engineering construction (for example, petro-chemical sites); and
- Domestic housing.

At the end of the training, injuries and diseases in the industry reduced drastically by about 70 percent and this made the industry very attractive to people even women. The fatality rate for the industry became 1.7 deaths per 100,000 workers

During the 1998-1999 financial year, the construction industry in Australia was estimated to have employed 597,000 people (including employees and self employed). This figure represents 7 percent of employment in all industries. In May 1999, the construction industry employed 647,300 workers in Australia (231,100 workers in general construction and 416,600 in construction trade services). The majority of workers were male (87.8 percent) and were employed full-time. Approximately 5 percent of full-time construction workers were female, with more female workers employed part-time than males (59.3 percent).

2.8.3 India's Social Security System

According to the Youth for Western Civilization (2000), 369 million workers in India can be found in the informal economy and 28 million workers in the formal sector. This implies that 92 percent of the workforce is in the informal economy with a contribution of 60 percent to Gross Domestic Product. Also, 65 percent of the workers in the informal

economy are in Agriculture, the second largest part of Informal work force is in construction and third largest part is in fishing activities.

Workers in the informal economy are not recognized and protected through labour legislation. They do not have fixed hours of work, fixed income or salary, work agreements and compensations. They do not have respect in the society and they face harassment in their work place. Social security schemes do not cover these workers neither do they have access to financial resources through credits from banks and financial institutions.

In order to help these informal workers, the government of India formed "welfare boards" per work activity in some regions. It aimed to enable a social security system for the workers in the areas of health, education, death, retirement, compensation for occupational death, pension and insurance. These welfare boards are managed by the government authorities in the form of corpus funds to provide social security. Workers in the informal economy have to join the trade union to identify themselves as workers in that particular field of work to benefit from the fund. Through the Trade Union they get the membership in the state welfare boards. To ensure sustainability of the fund, each worker makes a monthly contribution to the welfare fund.

The federal government enacted a central legislation for the welfare funds for construction workers. About 20 million construction workers in the country currently benefit from this fund. A small tax is collected from the cost of construction project that goes to the corpus of the welfare fund for the construction workers. The fund is managed through the welfare board formed by the government.

The main limitation of this social security system is that most of the workers were unaware of its existence. Lack of publicity and campaign from the government and labour ministry on the social security scheme made the program non reachable to many. The labour department also lacks the human resource to implement, promote and

monitor. This notwithstanding government has intensified publicity to draw informal workers.

2.9 International Conventions

There are several agencies dedicated to improving occupational safety and health. The most prominent of these are the International Labour Organization (ILO), and the World Health Organization (WHO). Occupational Health and Safety has also been an important issue for the United Nations Conference on Environment and Development (UNCED).

2.9.1 The International Labour Organization

The International Labour Organization (ILO) which seeks to promote safe and decent work in all countries of the world is a member of the United Nations organizations. It is responsible for the formulation of international labour standards in the form of Conventions and recommendations. Since 1919, the International Labour Organization has approved and published nearly 190 Conventions, which are statements of legally binding international treaties related to various issues regarding work and workers. They cover a wide range of working conditions such as hours of work, the right of association for workers, child labour, employment discrimination, labour inspections, maternity leave, health and safety, workers' compensation, medical examinations, minimum working age, holidays with pay, and contracts of employment for indigenous workers.

Hogstedt and Pieris (2000) identified the major objective of the ILO in relation to occupational safety and health as enabling countries extend social protection to all groups in society and to improve working conditions and safety and health at work through its InFocus Programme which covers working conditions. The objectives of the Safe Work Programme are;

- To create worldwide awareness of the dimensions and consequences of work-related accidents, injuries and diseases
- To promote the goal of basic protection for all workers in conformity with international labour standards; and

- ❖ To enhance the capacity of member States and industry to design and implement effective preventive and protective policies and programmes.

The ILO provides for the adoption of a national occupational safety and health policy and describes the actions needed at the national level and at the enterprise level to promote occupational safety and health and to improve the working environment. The ILO Occupational Health Services Convention 1985 (No. 161) and Recommendation (No. 171), provide for the establishment of occupational health services which will contribute to the implementation of the occupational safety and health policy and will perform their functions at the enterprise level. Within the ILO is also the International Safety and Health Information Centre (CIS) in Geneva, Switzerland. The major objective of CIS is to be a worldwide service dedicated to the collection and dissemination of information on the prevention of occupational accidents and diseases (OHS Convention, 1985).

2.9.2 World Health Organization (WHO)

The World Health Organization was established in 1948 to improve the health status of working populations. WHO has an occupational health programme with emphasis on data collection and analysis, research, formulation of strategies and recommendations for hazard prevention and control, human resource development with special emphasis on developing countries. It is responsible for offering technical advice and expertise on health and safety by setting hygienic standards, promoting medical services and medical examinations.

WHO's way of solving health problems vary substantially according to the national and local needs and conditions, cultural influences, resources and other local factors. Currently, there is a network of occupational health institutes assigned as WHO collaborating centers. The policy objective of this collaboration is "a global strategy for occupational health for all" with 10 priority objectives. These objectives according WHO (1994a) include;

- ❖ Strengthening of national policies for health at work and development of policy tools.
- ❖ Development of healthy work environment
- ❖ Development of healthy work practices and promotion of health at work
- ❖ Strengthening of Occupational Health Services (OHS)
- ❖ Establishment of support services for occupational health
- ❖ Development of occupational health standards based on scientific risk assessment
- ❖ Development of human resources for occupational health
- ❖ Establishment of information systems
- ❖ Strengthening of research
- ❖ Development of collaboration in occupational health and with other activities

2.9.3 International Organization for Standardization (ISO)

The International Organization for Standardization (ISO) is the world's largest developer and publisher of international standards. It is a non-governmental network of the national standards institutes of 162 countries. It develops standards that are based on the best scientific evidence available, and which are agreed to by consensus among all participating nations (ISO/IEC, 2007).

2.9.4 Nigeria Labour Laws

According to the laws of the federation of Nigeria (1990), an employer creates an employment contract that guides the relationship with employees. Corporations must have a staff handbook that provides details on wages, work hours, vacations and much more. Employers cannot prevent workers from forming or joining a union, and maternity leave can begin six weeks before the birth of a child and last until six weeks afterward. The mother will receive only half of her usual pay.

Under the Factories Act, every factory must be registered with the director of factories, remain sanitary and not be overcrowded. The Workmen's Compensation Act guarantees compensation for those injured during the course of employment. If an employee dies on the job, his dependents will receive 42 months worth of his pay (Factories, Offices and Shops Act 1970).

2.9.5 South African Labour Laws

The Department of Labour is charged with regulating the relationship between employers and employees in South Africa. It enacts legislation such as the Occupational Health and Safety Act (OHSA), which aims to protect employees on the job. Although OHSA is a labor law, it does not apply to miners and those who work in fisheries.

Another South African labor law is the Employment Equity Act (1998) which promotes equal opportunities for disadvantaged groups. The law also requires employers to reduce any wage gaps among employees and forbids discrimination in the workplace. The Labour Relations Act deals with unions and allows bargaining councils to resolve labor disputes and conclude labor contracts.

2.10 Occupational Health and Safety Legislations in Ghana

According to Clarke (2005), there are two main statutes in Ghana that have charted the course for the provision of services over the years. These are the Factories, Offices and Shops Act 1970, Act 328 and the Mining Regulations 1970 LI 665 which have driven the implementation in the Labour and mining sectors, respectively. The ministry of manpower and employment is responsible for the administration of occupational health and safety of workers. This is done through the Department of Factories Inspectorate and the Labour Department. Other statutes that have a bearing on OHS are the Workmen's Compensation Law 1987, Environmental Protection Agency Act 490, 1994, and the Ghana Health Service and Teaching Hospitals Act 526, 1999.

Section XV of the Labour Act 651, 2003, covers Occupational Safety, Health and Environment. This is based on the tenets of ILO Conventions Nos. 155 and 161 which the country has not yet ratified.

2.10.1 The 1992 Constitution

Ghana's constitution guarantees every person the right to work under satisfactory, safe and healthy conditions, and the right to receive equal pay for equal work without distinction of any kind. Workers are further assured of rest, leisure and reasonable limitation of working hours and periods of holidays with pay, as well as remuneration for public holidays. The Constitution also provides for the right of workers to form or join trade union of their choice for the promotion and protection of their economic and social interests, forced labour however is prohibited.

2.10.2 Factories Offices and Shops Act (1970)

The Factories, Offices and Shops Act of 1970, (Act 328) was promulgated in 1970 to reduce the risk of injury and safeguard the health conditions of all employees. The Act seeks to ensure that every employee has access to the Act and its amendments as well as the address of the Chief Inspector. It also spells out clearly what should be done when there is an accident. Example Section X of the Act states, "Where an accident in any factory, office or shop:

a) causes the death of a person employed therein; or
b) disables any such person for more than three days from earning full wages at work at which he was employed, the occupier shall forthwith send written notice of the accident, in the prescribed particulars, to the Chief Inspector or the inspector for the district".

In summary, the Act makes provision for the following: registration of all factories, Health and safety of workplaces, accident notification and workplace sanctions.

2.10.3 Minerals and Mining Law 1970 LI 665

This Law provides that a holder of a mining right shall to the maximum extent possible and consistent with safety, efficiency and economy, give preference in employment to citizens of Ghana in all phases of his operations.

2.10.4 Workmen's Compensation Law 1987 (PNDC187)

The Workmen's Compensation Law holds employers liable, subject to the provisions thereof, for personal injury sustained by a workman by accident arising out of and in the course of his employment. The Law prescribes the compensation payable by an employer depending on the nature of injury sustained by the worker and the degree of incapacity resulting. Employers are not however liable to pay compensation where the accident causing the injury to the worker is attributable to the workman having been at the time thereof under the influence of drugs or alcohol or in respect of any incapacity or death resulting from a deliberate self-injury. However, a worker acting in contravention of any statutory or other regulation relating to his employment, or acting without the instructions of his employer at the time the accident happens is nevertheless deemed under the Law to be acting in the course of his employment for the purposes of entitlement to compensation, provided the worker was acting for the purposes of and in connection with the employer's business or trade.

Where a corporate employer goes into liquidation or receivership, or where a floating charge debenture holder goes into possession, the rights of the employer company as against any insurer of its liability under this Law, is by statute, transferred to and vested in any workman entitled to compensation in accordance with Act, and that workman has the same rights and remedies, and is subject to the same liabilities under the policy, as the employer company.

2.10.5 Labour Act, 2003

The Labour Act is the six hundred and fifty-first Act of the parliament of the republic of *Ghana* which was enacted to consolidate the laws relating to labour, employers, trade unions and industrial relations. It also establishes a National Labour Commission to facilitate the settlement of industrial disputes, investigate labour related complaints and promote effective labour co-operation between stakeholders. Major provisions of the Labour Act include establishment of public and private employment centers, protection of the employment relationship, general conditions of employment, employment of persons with disabilities, employment of young persons, employment of women, fair and unfair termination of employment, protection of remuneration, temporary and casual employees, unions, employers' organizations and collective agreements, strikes, establishment of a National Tripartite Committee, forced labour, occupational health and safety, labour inspection and the establishment of the National Labour Commission. The Regulations also provide for the appointment by the Commissioner of Labour Boards responsible to investigate conditions of employment of any workers or group of workers in Ghana and to make recommendations as to the minimum remuneration to be paid and conditions which should be applied to the relevant workers or group of workers. The Commissioner may give effect to the recommendations of a Labour Board by making an Order to that effect whereupon employers are obliged to comply with the Order.

2.11 Problems of OHS Legislations in Ghana

There are several shortcomings of the legal provisions on OHS. The Factories' Act and Mining Regulations which have for years provided guidance for implementation are very limited in coverage. The vast majority of industries, including agriculture and most of the informal sector are therefore not specifically covered (Clarke, 2005).

Secondly, the provisions are very limited in scope with regards to preventive measures. Preventive strategies like risk assessments, medical surveillance and control of hazards

are not catered for. There is an overlap of some of the functions mandated by these pieces of legislation for different ministries. For example, both the Environmental Protection Agency (EPA) Act and Factories Act mandate entry into factory premises by inspectors from the EPA and Factories Inspectorate, respectively. There is also some disagreement between the Factories' and Mines' Inspectorates regarding the inspection of explosives' stores, which both organizations have a mandate for. (Factories Offices and Shops Act, 1970)

There is a lack of specification of standards which should form the yardstick against which services are to be evaluated. Compensations as defined by the Workmen's Compensation Law bear no relation to the level of risk to which workers are exposed. The laws do not define funding mechanisms for OHS that should be applied both by government and the private sector. OHS programmes are therefore grossly underfunded, a reflection of the low priority accorded to it by the government **(**Workmen's Compensation Law 1987).

The National Health Insurance Schemes (being put in place) though catering for curative care, explicitly exclude OHS provisions like rehabilitation and provision of prosthesis.

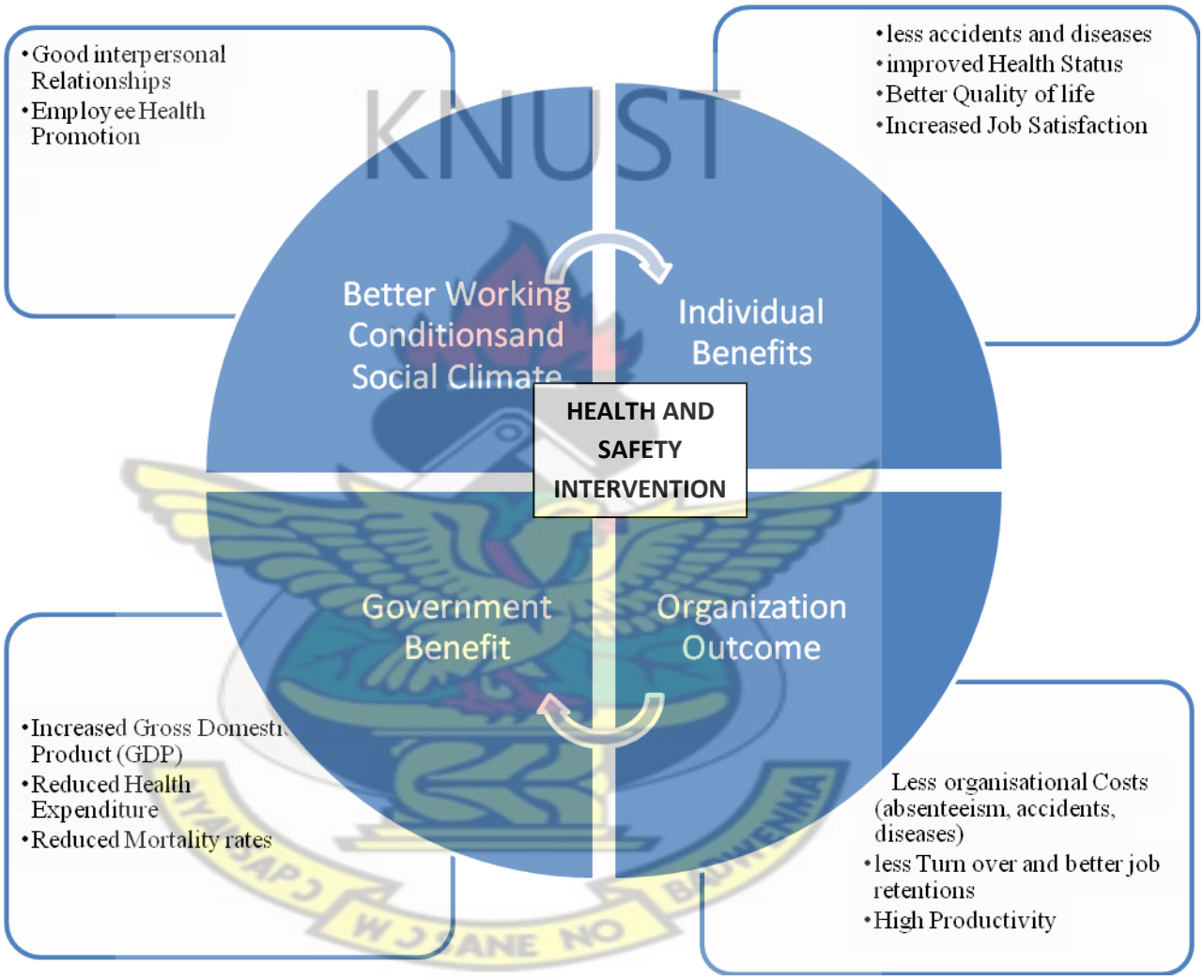
2.12 Conceptual Framework

The most basic of ethical principles deals with avoiding doing harm to others. It has been an unfortunate but common occurrence however, for these moral codes to be kept in the realm of "personal" codes, and not always applied to business dealings. Clearly, creating a healthy workplace that does no harm to the mental or physical health, safety or well-being of workers is a moral imperative (WHO, 1999).

All organizations and institutions are in business to be successful at achieving their missions. All these workplaces require workers in order to achieve their goals, and there is a strong business case to be made for ensuring that workers are mentally and physically healthy through health protection and promotion.

OHS is important not only to individual workers and their families, but also to the productivity, competitiveness and sustainability of enterprises or organizations, and thus to the national economy of countries and ultimately to the global economy at large. The framework in Figure 2.3 represents the necessity of Health and Safety Interventions.

Figure 2.3 Conceptual Framework for Occupational Health and Safety



Source: Author's Construct (2010)

From figure 2.3, health and safety interventions creates conducive environment for workers and helps them to relate freely. This reduces health risks to individuals and the resulting effects on their families and the society at large. A central belief in most of the

occupational health promotion literature is that people perform better when they are physically and emotionally able to work and want to work, which in turn leads to higher productivity, which can lead to higher profits. The effectiveness of human resource depends on the organizational climate and relationships as well as strategies put in place to ensure their well being.

The productivity of organizations plays a vital role in determining the Gross Domestic Product of countries. This is because the organization will be in the position to pay taxes to support government development projects. Occupational Health Interventions also reduces government expenditure on health and consequently reduces rates of mortality

2.13 Summary

The literature revealed that occupational injuries and diseases have claimed the lives of many people. These deaths have implications for development and so there is the need to put in measures to mitigate this catastrophe

It is clear that OHS policy and regulation in many countries follow a similar pattern, but there are significant differences in the way in which policy and law have been implemented by different countries. Similar formulations of policy and law have produced different results in different places. These appear to be related to differences in political, social, and economic conditions and are subject to variation over time.

CHAPTER THREE
RESEARCH METHODOLOGY AND PROFILE OF STUDY AREA

3.0 Introduction

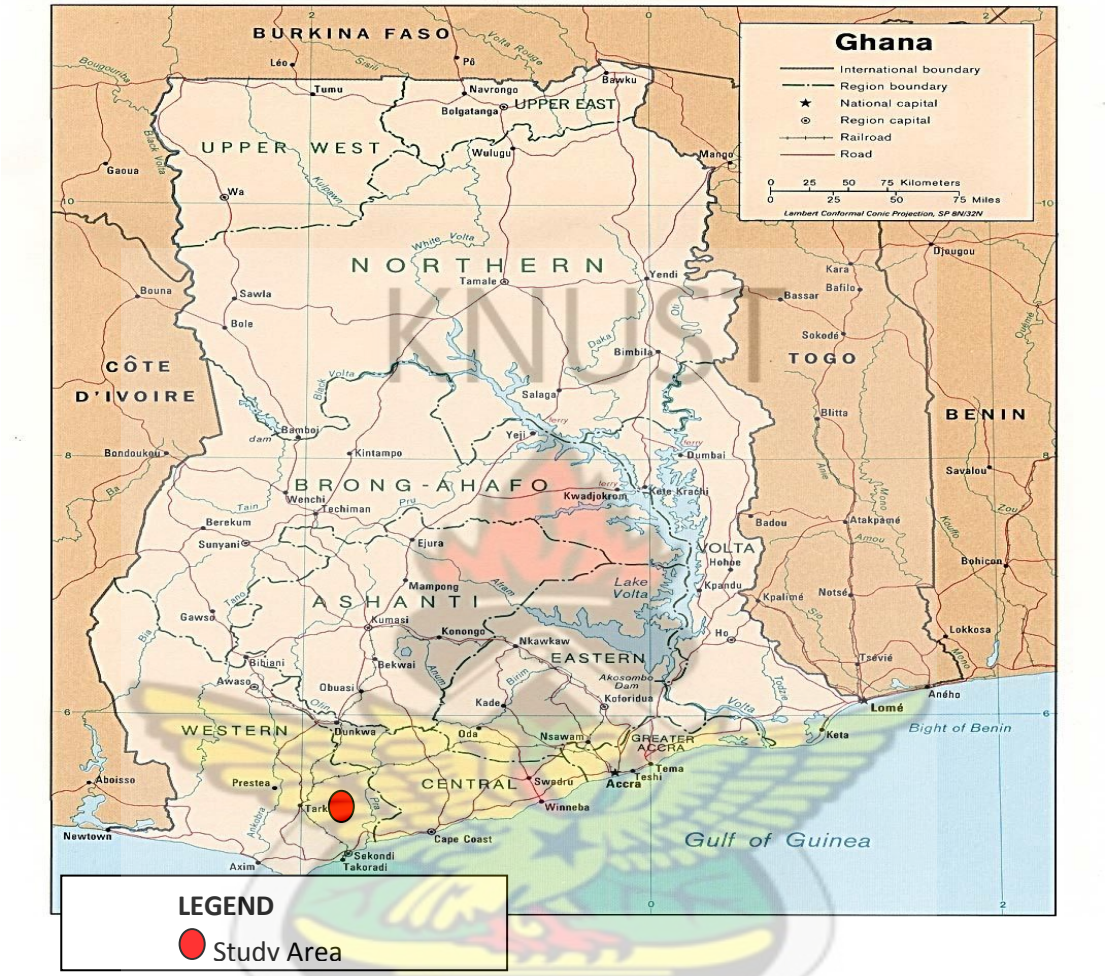
This chapter describes the profile of the study area and the methodology adopted for the study. Specifically, the methodology included the following elements; the research design, data sources, population, sampling and sample determination and the data analysis. It also describes the research instrument and their application and other methods to be used in calculating economic cost of injuries and maintaining validity and reliability of the research instrument.

3.1 Profile of Study Area: Location

The Sekondi Takoradi Metropolitan Area (STMA) covers a land area of 49.78 km² and is located on the West Coast, about 280km west of Accra and 130km East of La Cote D'Ivoire. The Sekondi Takoradi Metropolitan Area, with Sekondi as the administrative capital, occupies the south-eastern part of Western Region. It is located on the coast, about 200km west of Accra and is within the Greenwich Mean Time zone. The district lies between latitude 4° 53' N and longitude 1° 45' W as indicated in figure 3.1 (STMA, 2011).

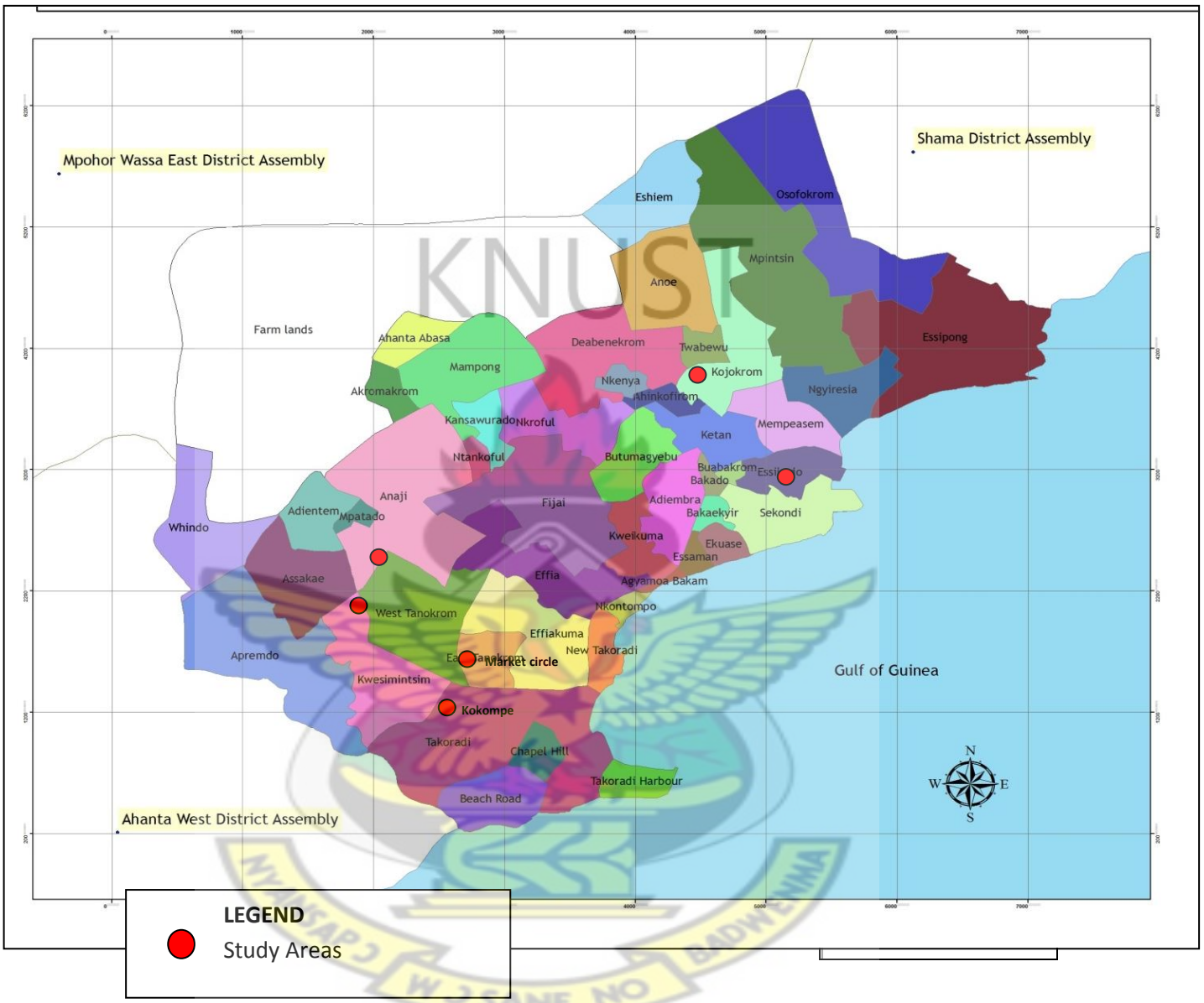
It is also bordered to the West by Ahanta West District, to the North by Mpohor Wassa East, to the East by Shama District Assembly and to the South by the Gulf of Guinea. It is strategically located considering its closeness to both the sea and the airport. The region is also connected to the major cities by rail and road making her widely accessible (STMA, 2011). Figure 3.2 shows the various boundaries of the district.

Figure 3.1: Study Area in National Context



Source: www.maps.google.com.gh

Figure 3.2: Map of Sekondi-Takoradi Metropolitan Assembly Showing Study Areas



STMA, MEDUIM TERM DEVELOPMENT PLAN (2010-2013)

3.2 Demographic Characteristics

The current population of the Metropolis is 404,041 with a growth rate of 3.2 percent. The population of the city grew from 103,834 in 1970 to 249,371 in 1984 then increased to 369,166 in 2000. It is projected that the population of the Metropolis would be 444,752 by 2013.

3.2.1 Age–Sex Distribution

About 44.8 percent of the population are below the age of 14 with 51.9 percent between 15 and 64 while those above 65 years are only 3.3 percent. The working population therefore constitutes a total 209,697 (51.9 percent). The dependency ratio of the metropolis is approximately 1:1 implying that one economically active person takes care of one person (STMA- MTDP, 2011-2013).

3.3 Economic Profile

The local economy of the Metropolis could be classified into three major sectors; namely industry, agriculture and service.

The industrial sector engages 19.1 percent of the labour force. The major industrial activities include cocoa processing by West African Mills Company (WAMCO), flour milling, sawn timber and wood processing. The Metal and Concrete manufacturing industry is the largest major manufacturing industry in the Sekondi/Takoradi metropolis. However, this percentage is expected to increase because of the discovery of oil in the region and its attendant attraction of investors into the oil and gas industry.

Agriculture, the backbone of the Ghanaian economy accounts for 21 percent of economic activities in the Metropolis. Majority of those engaged in agriculture are into crop farming (14.5 percent) while about 6.5 percent are engaged in fishing.

The service sector is the largest employer of the labour force in the Metropolis. It employs 59.9 percent of the active labour force and more than 45 percent can be accounted for in the informal sector. The major commercial activities in the district include buying and selling, with the major items of trade being agricultural products and inputs, orthodox and herbal drugs, autoparts, clothing, provisions, petroleum and plastic products.

3.3.1 Employment

Employment opportunities in an area are the avenues through which inhabitants obtain their livelihoods. About 31 percent of the labour force are employees either by private or the public employers. The self-employed without employees accounts for 50.7percent whilst 6.7 percent are self-employed with employees. Unpaid family workers make up 2.1 percent of the labour force whilst apprentices make up 6.2 percent. On the whole the informal service sector dominates informal activities making up 59.7 percent of all informal activities (PHC, 2000).

3.4 Health Characteristics

There are total of 34 health facilities made up of nine Hospitals, two Polyclinics, four Health Centres, and 19 Clinics. The Metropolis is the highest contributor of outpatient attendance of 436,271 (17.2 percent) of the regional total excluding the regional hospital's (Effia Nkwanta) contribution of 131,235 (5.2 percent) of the regional total. Hospital admissions have an average of 100,000 a year. The prevalent disease in the district is malaria.

3.5 Research Design

The research design for the study was a case study. The case study approach involves procedures and techniques of investigations but not exclusively based on intensive interviewing. It was adopted because it was considered to be the best approach for the study of contemporary issues such as Occupational Health and Safety (Kvale, 1996).

The study also involved both quantitative and qualitative approaches to research. Burns and Groove (1993) define quantitative research as a formal, objective, systematic process to describe and test relationship and also examine cause and effect interactions among variables.

Quantitatively, the study captured economic and social cost of occupational injuries and diseases by specifically considering medical costs and other non-health costs. Qualitative research which is also descriptive in nature was used because it provides accuracy of

research attributes example behavior, opinions, perceptions and knowledge of a particular individual or group on a phenomenon.

3.6 Data Sources

Relevant information for the study was obtained from both primary and secondary sources. Questionnaires and interviews were the main tools to gather information from the workers in the informal service sector as well as institutions that oversee the activities of the sector. These institutions included the Department of Factories Inspectorate (DFI), the Labour department and the OHS Department of the Ministry of Health. Questionnaires were both structured and unstructured. Structured questionnaires usually make analysis easier whilst unstructured ones allow respondents to give all relevant information without restrictions. Secondary sources of data such as periodicals, journals, reports, publications and unpublished thesis were also consulted to supplement the primary data.

3.7 Data Collection Instruments

3.7.1. Questionnaire

A questionnaire on OHS were used in order to identify the occupational risks associated with the informal service sector and describe the perceptions of employees on Occupational Health and Safety. Apart from employees, questionnaires were administered to work-place managers who, as part of their general duty of care, are required to ensure the effective application of OHS policy and practice to their work-place. The questionnaires also ascertained perceptions on economic costs of risks and injuries and ways of preventing these injuries.

The aim of the questionnaire was to generate reliable and valid data from a high proportion of population within a reasonable time period at a minimum cost. The use of a questionnaire is relatively cheap and a quick way of obtaining information. The questionnaires were both closed ended and open ended. The closed ended questionnaires

aided the coding and analysis of responses whilst the open ended facilitated richness and intensity of responses.

Questionnaires were personally administered by the researcher and one research assistant who was educated thoroughly on the subject. This is because majority of informal workers especially those in the service sector are illiterates and may not be able to read and write. The questionnaire was therefore interpreted into the local dialect to ensure clarity of understanding by respondents.

3.7.2 Interview Guide

According to Kvale (1996) research interviews try to understand something from the subjects' point of view and to uncover the meaning of their experiences. Interviews allow people to convey to others a situation from their own perspective and in their own words. The interview was conducted with the institutions involved in OHS. These institutions include: Department of Factories Inspectorate, Labour Department, Occupational Health Department of the Ministry of Health and leaders of Trade Union Congress.

3.7.3 Reliability of Research Instrument

According to Polit and Hungler (1993), reliability is the degree of consistency with which an instrument measures the attribute it is designed to measure. The questionnaires that were administered to workers in the various categories were consistent and followed a logical pattern such that responses did not contradict or conflict each other. Biases in data collection were also reduced to the barest minimum by ensuring that at most questionnaires were self administered by the researcher and the research assistant.

3.7.4 Validity of Research Instrument

The validity of a research instrument determines whether the research truly measures that which it was intended to measure. The study sought to achieve both content and external validity. Bashir (2008) consider content validity as the extent to which an instrument represents the variables understudy. Questions were based on information gathered

during the literature review to ensure representativeness. They were also based on the objectives and the data requirement as presented in Table 3.1

External validity refers to the extent to which study findings were generalized beyond the sample used. Therefore based on the sample and the information gathered the study was generalized.

3.8 Ethical Considerations

Research requires not only expertise and diligence but also honesty and integrity. Ethics in research refers to the norms for conduct that distinguish between acceptable and unacceptable behavior (David and Resnik, 2010). This is done to protect the rights of respondents. To render this, the rights to anonymity, confidentiality and informed consent were observed.

Permission was sought or obtained from the leaders of the various associations as well as employers. Respondents were well informed about the purpose of the study, the required data and were assured that there would be no potential risks or costs associated with the exercise.

3.9 Population

According to Castillo (2009), a research population is generally a large collection of individuals or objects that is the main focus of a scientific query. Workers were selected from four main categories in the informal service sector since a complete survey could not be undertaken. These categories are the beauticians, drivers, mechanics and head porters (Kayaye).

Table 3.1: Data Requirement and Sources

Objectives	Data Requirement	Sources	Mode
To examine the nature and operations of Ghana's informal sector	Distribution by the different sectors of the economy (Agric, Industry, Manufacturing) Contribution to economic growth in the region Work environment	Medium Term Development Plans Statistical Service Report Workers Employers	Interview Guide Questionnaire Secondary (journals, books and other publications)
To assess key health and safety risks associated with the informal service sector	Occupational Risks and hazards Types/potential hazards, Frequency Groups usually affected by hazard	Management Workers	Questionnaire and observation
To assess the economic and social costs of occupational injuries and diseases.	Effect of injuries and diseases on productivity Medical costs and other non-health costs (Absenteeism, Total working hours, and Minimum wage) Effect of injuries and diseases on individual capability (Disability, Social responsibility-School fees, health, housing and other family needs) Environmental effects of activities	Management Workers President of Associations	Questionnaire
To identify interventions by government, employers and employees who manage risks at workplaces	Government Policies OHS policies of institutions Roles and responsibilities of employers and employees in managing OHS	Regulatory Bodies Management Workers	Interview Guide Questionnaire and observation
To make recommendations for policy directions	Safety measures, organizational health and safety policies-insurance, safety work kit	Workers Regulatory Bodies Researcher	Questionnaire Interview Guide Data analysis

Source: Author's Construct (2010)

3.10 Sampling

The multi-stage sampling technique was deemed as most appropriate for the study. Purposive sampling was used in obtaining institutional data from the Regulatory bodies like the Department of Factories Inspectorate, Department of Labour and Ministry of

Health. This technique was used because the needed information could only be provided by these institutions that are knowledgeable about the subject under discussions.

The simple random sampling was used to select respondents within the categories of beauticians, mechanics, porters and drivers. A sample size was selected from a sample frame of these work categories from the Business Advisory Committee and presidents of associations. Hence each individual in a workplace had the same probability of being chosen at any stage during the sampling process (Jiang, 2000). The workers were randomly selected from transport yards, market places, salons and garages from six sub-district localities. Table 3.2 provides details of the number of respondents and their respective locations.

Table 3.2: List of Communities Visited

Location	Category of Workers	Sample
MARKET CIRCLE	PORTERS	60
	BEAUTICIANS	30
KOKOMPE	MECHANICS	60
TANOKROM	MECHANICS	40
SEKONDI	PORTERS	40
	BEAUTICIANS	10
KWESIMINTSIM	BEAUTICIANS	30
KETAN	BEAUTICIANS	30
	Total	400

Source: Field Survey, March 2011

3.10.1 Determination of Sample Size

The sample size for the four categories was determined using the mathematical approach by Miller and Brewer (2003):

$n=N/ [1+N (\alpha)^2]$

Where, n is the Sample size, N is the Sampling frame, α is the Error margin and 1 is the Constant (Details of calculations in Appendix 1)

3.11 Data Analysis

Before the data was analyzed, the collected data was processed by editing and coding to eliminate all errors. Both quantitative and qualitative techniques of data analysis were adopted. Quantitatively, the data was collated and presented using Statistical Package for Social Scientists (SPSS version 19) to provide frequency tables and graphs. Cross tabulation was also used to determine the proportion of people who use a particular facility against their age, sex or educational background. Qualitative technique was used to assess people's perceptions regarding the type of hazards they are exposed to and health facilities.

The Cost of Illness Approach (COI) was used to calculate the economic costs of OHS diseases and injuries. The indirect cost was also calculated using the lost earnings of the sick person, cost of transportation to and from a health facility and cost of damage to properties. Lost earnings were calculated using last year's minimum wage on the assumption that all workers receive the minimum wage irrespective of whether they were apprentices, employees or employers. This was done to prevent biases in cost calculation since apprentices are not paid though they sustain injuries.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

Within the theoretical framework which has been developed in chapter two, with particular reference to OHS, sufficient grounds have been laid to analyse and discuss the primary data. The chapter therefore places emphasis on key health and safety risks, economic costs of occupational injuries and diseases, OHS interventions by employers and employee and institutional response to OHS problems in the informal service sector in the Sekondi-Takoradi Metropolis. The chapter begins with the background of all respondents and subsequently borders on the health and safety of each work category and ends with the institutional response to occupational health and safety issues.

4.2 Background of Respondents

Data was collected from two major categories which are OHS institutions and informal service workers. The number of respondents for each OHS institution is represented in Table 4.1

Table 4.1: Respondents from OHS Institutions

Institution	Number of Respondents
Metropolitan Factories Inspectorate	2
National Factories Inspectorate	1
National Labour Office	1
Metropolitan Labour Office	1
OHS Unit (Ghana Health Service)	1
Trade Union Congress (TUC)	1
Total	**7**

Source: Field Survey, March 2011

From the institutions, key informants who were considered to be abreast with OHS issues were interviewed. It can therefore be observed from Table 4.1 that, three factories Inspectors (one national factories inspector and two metropolitan inspectors), two labour officers (one from the national level and the other metropolitan) an OHS specialist and the TUC representative in-charge of OHS were interviewed. With all these institutions in

place, it can be said that health safety should not be a problem in Ghana. This view is however divergent as the study will reveal in other sections

A total of 440 respondents selected across a section of service providers were interviewed. These service providers included beauticians, mechanics (including sprayers, welders and panel beaters), drivers (taxi drivers, mini-bus drivers and bus drivers) and porters. Table 4.2 indicates the details of respondents interviewed.

Table 4.2: Work Category of Respondents

Work Category	Number of Respondents							
	Employers	**%**	**Employees**	**%**	**Apprentice**	**%**	**Total**	**%**
Beauticians	20	26	17	7.9	83	55.7	120	27.3
Mechanics	20	26	34	15.9	66	44.3	120	27.3
Porters	-		100	46.7	-	-	100	22.7
Drivers	37	48	63	29.5	-	-	100	22.7
Total	**77**	**100**	**214**	**100**	**149**	**100**	**440**	**100**

Source: Field Survey, March 2011

From table 4.2 it can be deduced that 55.7 percent of beauticians were apprentices who were learning the trade and yet were providing cheap labour to their employers. Porters and drivers on the other hand were not identified to be having apprentices. However, 48 percent of drivers were vehicle owners, and 29.5 percent were employees to other vehicle owners.

The study further revealed that, majority of respondents were males (67.8 percent). This is because the drivers, mechanics and porters were mainly males. Ninety-six percent of mechanics were males while male porters constituted 70 percent. This number of male porters is quite surprising since several studies Opare, (2003), Yeboah and Appiah-Yeboah (2009) and Agarwal et al (1997)) prove the dominance of females in the activity. All the drivers who participated were males; the least number of males (5 percent) were however recorded among the beauticians.

Table 4.3: Demographic Characteristics of Informal Service Workers

Variable	Frequency(n=440)	Percentage
Age		
< 30 years	154	38.5
30-49 years	203	43.3
50+	83	18.2
Minimum age: 17 (1.75%)	Maximum Age: 73 (0.5%)	Mean: 16.1
Educational Level		
Primary	79	18
JHS	216	49
SHS	48	11
Vocational	5	0.8
Technical	33	7.5
Never Attended School	59	13.5
Marital Status		
Single	245	55.7
Married	160	36.4
Divorced	24	5.4
Widowed	11	2.5

Source: Field Survey, March 2011

It was realised that there is no age limit for employment in the sector since 1.75 percent of workers were as young as 17 years and 0.5 percent were as high as 73 years. Specifically from Table 4.3, a greater percentage of 43.3 of the workers were between the ages of 30 – 49, 38.5 percent of respondents were below 30 years whilst 18.2 percent were above 50 years. The highest educational level attained by 49 percent of respondents was JHS which was closely followed by primary education by 18 percent of respondents. This implies that majority of informal service workers have had some level of education at least to the basic level. As indicated in Table 4.3, 13.5 percent of respondents had never been to school implying the limited recognition given education in the informal service sector.

Regarding marital status, 55.7 percent were single closely followed by 36.4 percent being married and 5.4 percent and 2.5 percent divorced and widowed respectively. About 50 percent of all respondents had dependents both of school going age and the aged. Also 48.8 percent of the respondents were the bread winners in their families. This implies that

the informal service sector comprises young and energetic youth whose skills need to be developed and enhanced to ensure the development of the sector.

Economically, the employment status of respondents was basically full time and part time with 93.6 percent being full time employees. The remaining 6.4 percent were part-timers who were involved in other informal activities like trading and construction (Table 4.4).

Table 4.4: Economic Characteristics of Informal Service Workers

Variable	Frequency(n=440)	Percentage
Employment Status		
Full time	412	93.6
Part-time	28	6.4
Work Hours		
< Eight Hours	28	6.4
Eight Hours	112	25.4
12 Hours	266	60.5
14 Hours	23	5.2
16 Hours	11	2.5
Minimum = 4 hours	Maximum = 16 hours	Mean = 9.9 hours
Years of Employment		
< Five Years	92	20.9
Five – 20 years	111	25.2
Above 20 years	237	53.9
Minimum = 6 months	Maximum = 50 years	Mean = 7.2 years
Registration of Shops: Salons and Mechanical Shops (n=40)		
Registered	16	40
Unregistered	24	60
Associations (n=264)		
GHABA	98	37.1
GAG	92	34.9
GPRTU	74	28

Source: Field Survey March, 2011

From Table 4.4, 60.5 percent of full-timers work for 12 hours, 5.2 percent for 14 hours, 2.5 percent for 16 hours and the remaining 25.4 percent work for eight hours. Part-time workers work between four and six hours a day. This shows the kind of irregularity in

informal working hours and the work burden on employees comparable to regular working hours of eight within the public sector as cited by Pradhan and Soest (2002).

The informal sector attracts people on daily basis; this is reflective in the number of years of work. Exactly 20.9 percent of respondents had working experiences below five years whilst 25.2 percent had between five and 20 years. The remaining 53.9 percent had above 20 years of work experience. Available data shows that monthly earnings of employers and employees excluding apprentices ranges between a minimum of GH₵100 and a maximum of GH₵500. Specifically, 39 percent of employees were paid below GH₵100 a month and 41.6 percent of them received wages below the minimum wage of GH₵3.73 a day

Concerning registration and recognition by the Metropolitan Assembly of the activities of the informal service sector, only 40 percent of shop owners (mechanics and beauticians) had registered their shops with the STMA registrar and pay monthly taxes. The remaining 60 percent of mechanics and beauticians who had not registered their shops is a clear indication of the limited tax base for government as indicated by the 2011 budget (Budget, 2011). The minimum amount paid as monthly tax by employers was GH₵5.00 and the maximum was GH₵12.00. Employers who do not pay taxes were of the view that they do not see the essence of such payments since they do not derive any benefits from it. This non-registration of shops by employers partially confirms the definition of informal sector by ESCAP (2006), as all unregistered or unincorporated enterprises below a certain size who hire one or more employees on a continuing basis.

Also, 60 percent of respondents belonged to an association. These associations were Ghana Beauticians and Hairdressers Associations (GHABA), Garages Association of Ghana (GAG) and the Ghana Private Road Transport Union (GPRTU). The porters in the metropolis were the only exceptional group without any association. According to respondents, their associations seek to help members by setting standards to maintain their codes of ethics, advocating in government, marketing of members and providing education. These roles are in consonance with a paper by Hodson (2009) on "The

Importance of Belonging to a Professional Association". The institutions in Table 4.5 were noted to be visiting work premises for the attached reasons.

Table 4.5: Institutional Visits to Informal Service Workers

Institution	Reason for visit
Internal Revenue Service (IRS)	Collection of taxes
Sekondi- Takoradi Metropolitan Assembly	Collection of ground rent
Executives of Association	Inspection of proper working procedures

Source: Field Survey, March 2011

The survey revealed that workers only view the local government as an institution which is interested in money collection and not the welfare of workers (Table 4.5). There was not a single institution which was interested in the health and safety of employees. This situation is quiet disheartening since according to Alfers (2009) the current Labour Act of 2003 includes some groups of informal workers (although not all) in its Occupational Health and Safety clauses.

4.3 Occupational Health and Safety of Drivers

Drivers were selected from a range of intra-city and inter-city service providers. The intra-city drivers were basically taxi drivers constituting 30 percent and trotro drivers constituting 38 percent of respondents. The remaining 32 percent were large bus drivers who rendered inter-city services. The average distance covered by intra-city drivers a day was 50 kilometers and that of intercity drivers was 1200 kilometers. From the survey, drivers are usually exposed to physical, chemical, ergonomic and psycho-social hazards. Details of these exposures are highlighted below:

4.3.1 Physical hazards

The major physical hazard drivers are exposed to is constant noise from their own vehicles and the dominance of noise around the various work stations. From the survey, 94 percent of drivers are exposed to noise. Out of the 100 respondents, 90 percent

perceive the source of the noise to be from vehicles, two percent from machines and the remaining eight percent from traders and passengers.

Table 4.6: Perceived Noise Levels of Drivers

Noise Level	HOURS OF EXPOSURE						Total	%
	2 hours	3 hours	4 hours	5 hours	6 hours	Above 8 hours		
Very loud	0	0	2	4	2	8	16	17
Loud	3	2	7	6	6	32	56	59.6
Moderate	1	0	2	3	2	12	20	21.3
Low	0	0	0	0	0	2	2	2.1
Total	4	2	11	13	10	54	**94**	**100**
%	4.3	2.1	11.7	13.8	10.6	57.5	**100**	

Source: Field survey, March 2011

From table 4.6, it can be deduced that, a greater percentage of 59.6 of drivers perceive the noise at the workplace to be loud whilst a marginal percentage 2.1 perceive it to be low. The least hours of exposure on the other hand is two hours by 4.3 percent of drivers whilst the highest is above eight hours by 57.5 percent of them. It is therefore interesting to note that 25.5 percent of drivers have their sense of hearing affected by the level of noise and 74.5 percent of drivers do not recognize the effects of the noise on their hearing. Those whose sense of hearing is affected claimed they had pains in their ears and others had an impaired hearing. The researcher attests to this fact since some respondents had difficulties in hearing the researcher during the administration of questionnaire.

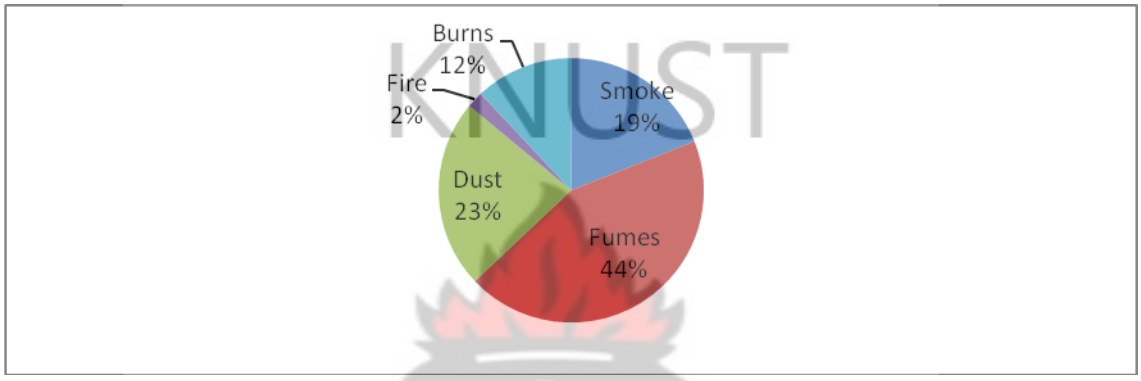
Drivers also complained of absorbing the failures (such as poor road networks and careless driving by other road users) associated with the transport system in the form of vehicle breakdown in the middle of journeys and conflict with customers. Aworemi et al (2009), stated the above reasons and others as the root causes of bad driver behavior to the road accident situation in South West Nigeria.

4.3.2 Chemical Hazards

Closely linked to the physical hazards is the exposure to chemical hazards. Drivers are exposed to diesel fuels with carcinogenic properties and exhaust emissions from the total

vehicle fleet also containing pollutants such as carbon monoxide, nitrogen oxides and sulphur dioxide all of which can damage the respiratory system (WHO, 2004). From the survey, exposure to fumes ranked first with 44 percent of drivers being exposed to it. This was followed by dust which was experienced by drivers who mostly provide intra-city services.

Figure 4.1 Chemical Hazard Exposures



Source: Field survey, March 2011

The least hazard was fire which was experienced by two percent of drivers. Exposure to the different types of chemical hazard is indicated in Figure 4.1.

4.3.3 Ergonomic Hazards

Drivers are exposed to a number of health problems as a direct result of the posture adopted in driving (Shires, 2010). Sitting in the driving position exerts considerable forces on the spine and can cause a number of problems with the musculoskeletal system in particular backaches, neck problems, pulled muscles, and general stiffness (Whitelegg, 1995). This was evident when 69 percent of drivers complained of pains associated with their posture whilst 18 percent said their posture was not comfortable.

Table 4.7: Ergonomic Hazards among Drivers

Musculoskeletal disorders	Frequency	Percentage
General body pains	40	18.1
Backaches	56	25.4
Waist Pains	42	19.0
Backaches and Waist Pains	54	24.4
Neck problems	19	8.6
Pulled muscles	10	4.5
Total	**221**	**100**

Source: Field Survey, 2011

Table 4.7 shows that, majority of drivers suffer from backaches as a result of their posture, 18.1 percent experience general body pains whilst 19 percent suffer from waist pains. A cross-sectional health inquiry by Backman (1983) in Scandinavian countries showed that the most common health problem among drivers was backaches. Aside this a Dutch study of 439 lorry drivers found an association between work demands and musculoskeletal complaints. The study is interesting because of the way it relates the musculoskeletal complaints to psychological aspects of the work environment. It therefore suggests a link between what the authors call "decision latitude" and a number of commonly occurring muscular and related complaints. The complaints include pain or stiffness in the neck as well as lower back pain.

The study further revealed that, 61 percent of drivers do not observe break periods. They only buy snacks by the way side and eat which does not promote their health as 46 percent of them do not wash their hands before eating. This is exhibited in the incidence of diarrhea among them. Van der Beek (1994) confirms in his study that approximately one third of drivers reported they frequently had no time for any scheduled rest breaks except for a meal respite. The study revealed that 56 percent of drivers do not observe public holidays as well as weekend breaks, thus the posture is kept for a week continuously without any rest except for a few hours of sleep they observe. According to the European Commission (2006), daily driving periods should not exceed nine hours and rest periods should be at least 11 hours each day. This is not being adhered to by drivers in the Sekondi-Takoradi Metropolis. A study by Sarah (2007) indicates that lack of sleep

among drivers is not just deadly but appears to increase the risk of heart disease and cardiovascular death.

4.3.4 Psycho-Social Hazards

Psycho-social hazards cause fatigue, stress and general loss of interest in work. According to Filiatrault et al (2002) to be able to work efficiently one must sleep for not less than eight hours. This is not respected among drivers since seven percent of them sleep for three hours, 11 percent sleep for four hours and 58 percent sleep between five and seven hours a day. The remaining 24 percent sleep for eight hours and above a day. This increases the stress level among drivers.

In view of these associated risks, 18 percent are not satisfied with their jobs. Twenty percent out of those who are satisfied with their jobs claim they have no other option. Those who are not satisfied gave reasons such as low income (55.5 percent), general lack of interest (16.7 percent) and the tediousness of work (27.8 percent). Concerning psycho-social hazards, 21 percent of drivers had poor relationships with their employers whilst 32 percent enjoy very good relationship with their employers.

4.3.6 OHS Interventions by Employers and Employees

From the on-going discussions, it can be deduced that drivers are very susceptible to health related problems and this situation deteriorates their health. Most way to reduce these negative impacts is usually beyond the drivers. They can prevent the effects of some psychological and physical hazards. From the survey, though drivers are exposed to excessive noise from diverse sources, no driver was identified to be using ear protectors. A report by Whitelegg (1995) confirms the non-usage of ear protectors among drivers and attributes it to the fact that drivers need to be in aural contact with the outside world and thus makes the noise situation beyond their control.

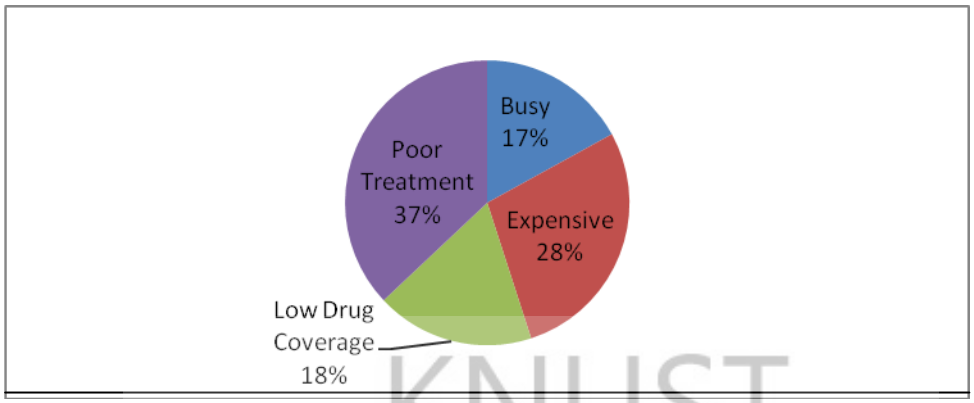
Considering safety device, it was realized that nine percent of respondents had only Fire extinguishers, 22 percent had first aid box in their vehicles, 53 percent of them had both

Fire Extinguisher and First Aid Box and three percent had only warning triangles. It was realised that 12 percent had none of the above mentioned equipments. As much as 20 percent of respondents drive without a driver's license and nine percent had no seatbelts in the vehicles. Even among drivers who had seatbelts, 42 percent admitted that they are uncomfortable with its usage and as such do not use them. This finding relates to a study by the Global Road Safety Partnership (GRSP, 2006) on seat belt compliance in Ghana, which indicated that only 40 percent of drivers comply with seat belt usage laws.

Most accidents in the country can be linked to the high speed at which drivers drive. It was identified that six percent of intra-city drivers drive below the acceptable speed limit 50km/h set by the National Road Safety Commission (NRSC, 2010). As much as 68 percent of both intercity and intra-city drivers drive between 50km/h -100km/h and 26 percent go beyond 100km/h. The highest speed identified among intercity drivers was 150km/h which is about two times more than the accepted speed limit in Ghana. This high speed level has the tendency of causing accidents as confirmed in a study by Nicol and Toumi (2010). By their study, speeding was responsible for 72.3 percent of the total number of accidents in Quatar in 2010.

Approximately 45 percent of drivers had not registered under the National Health Insurance Scheme (NHIS) which makes it very unsafe if they should be involved in an accident. Pletzke (2008) in his book, "Biggest Risks of not Having Health Insurance" stated that people without health insurance have statistically higher risk of dying earlier than those who have health insurance. The reason underlying this assertion was that people without health insurance may put off essential visits to the doctor, leading to detection of disease at later stages. When disease is diagnosed and treated at later stages, healthy outcomes are less certain, and the conditions may worsen and lead to an early death. From the survey, those who had not registered under the NHIS attributed it to the following reasons: the scheme is expensive (28 percent), drugs have low coverage (18 percent), busy work schedules (17 percent) and poor treatments from health care professionals (37 percent) as in figure 4.2.

Fig. 4.2 Non-Registration of the National Health Insurance Scheme



Source: Field Survey, March 2011

4.3.7 Economic Cost of Injuries and Diseases

According to the survey, a total of 31 accidents occurred last year among drivers, out of which 15 percent of respondents who were involved sustained injuries. Internal bleeding was sustained by three percent whilst arm laceration and joint dislocation were sustained by five percent and seven percent of drivers respectively.

Aside injuries, respondents were also susceptible to a range of occupational diseases. Four main disease types were identified among the drivers which are Malaria, Abdominal disorders, occupational asthma and chronic cold. Specifically, 43 percent suffered from malaria, where as 8.1 percent and 12.2 percent had abdominal disorders and chronic cold respectively due to poor environment and eating habits. The last disease type identified among 16.2 percent of drivers was occupational asthma and its related symptoms.

Table 4.8: Actual Occurrence of Occupational Injuries and Diseases among Drivers in 2010

Type of Ailment	Frequency	Percentage	Lost Man days	Lost Earnings (GH₵)	*Cost of treatment (GH₵)
Malaria	32	43	157	502.4	629
Abdominal disorders	6	8.1	8	25.6	20
Occupational Asthma	12	16.2	21	67.2	193
Chronic Cold	9	12.2	4	12.8	6
Injuries	15	20	88	281.6	707
Total	**74**	**100**	**278**	**889.6**	**1,555**

*Cost of Treatment excludes medical bills covered by NHIS

Source: Field Survey, March 2011

As shown in Table 4.8, malaria is common among drivers and has the highest number of lost man days as well as lost earnings. According to Cox (1993), Malaria is prevalent due to the stress drivers undergo which breaks down their immune system and thus makes them susceptible to malaria and other infectious diseases. He further explained stress as the difficulties that workers have in coping with demands and threats to their well being. This definition of stress can be appreciated from the viewpoint of 18 percent of drivers who are unable to meet their daily sales which ranges between GH₵20 and GH₵30 a day.

Drivers who complained of chronic cold also claimed they had severe chest pains which to them were as a result of the chronic cold and periodic coughs.

On the whole, total lost man days among drivers were 278. The total direct cost which includes cost of consultation and cost of medication and hospitalization excluding costs covered by NHIS is GH₵1,555.

The indirect costs of injuries and diseases was GH₵2,271.6 made up of transportation cost (GH₵202) to and from a health facility, lost earnings (GH₵889.6) based on last year's minimum wage of GH₵3.20 and vehicle damage (GH₵1,180).

Therefore, the economic cost (Direct cost +Indirect Cost) of injuries and disease among drivers was valued at GH₵3,826.6 for 2010.

4.4 Occupational Health and Safety among Mechanics

The category of mechanics the study covered were those involved in welding, vulcanizing, panel beating and paint spraying. Mechanics are exposed to physical, chemical, ergonomic and psychosocial hazards as discussed below:

4.4.1 Physical Hazards

Mechanics are major sufferers when it comes to noise and vibration. They spend long hours on different machines. It was realized that 96 percent of mechanics are exposed to noise whilst four percent do not experience noise at their workplace because they were sprayers who did not use any noise emitting machines. The main source of noise exposure is from machines and the beating of panel. More than half (51 percent) of respondents experienced noise which to them is very loud, 28 percent experience loud noise and 17 percent experience a moderate level of noise. Due to the noise level in the mechanical shops, the researcher had to shout during the questionnaire administration and likewise the respondents. In confirmation, another study by Granneman (2011), said there is a significant amount of hearing loss created by a significant amount of noise in mechanical shops. He further said that even if a casual visitor comes to a shop and may leave, he might not receive damage until the decibel level is 125 even at just a visit.

It was amazing to realize that 72 percent of respondents were exposed to noise for 6 hours and above whereas 21 percent experience noise for 5 hours and below. As a result, 63 percent of respondents have some difficulty in hearing.

With regards to vibration, it was realized that 33 percent of mechanics use drilling machines and as much as 19 percent stay on machines between two and eight hours. It is worth noting that those who stay on the drilling machine have one off-day for resting. This implies that the dangers of continuous stay on drilling machines are recognized among mechanics.

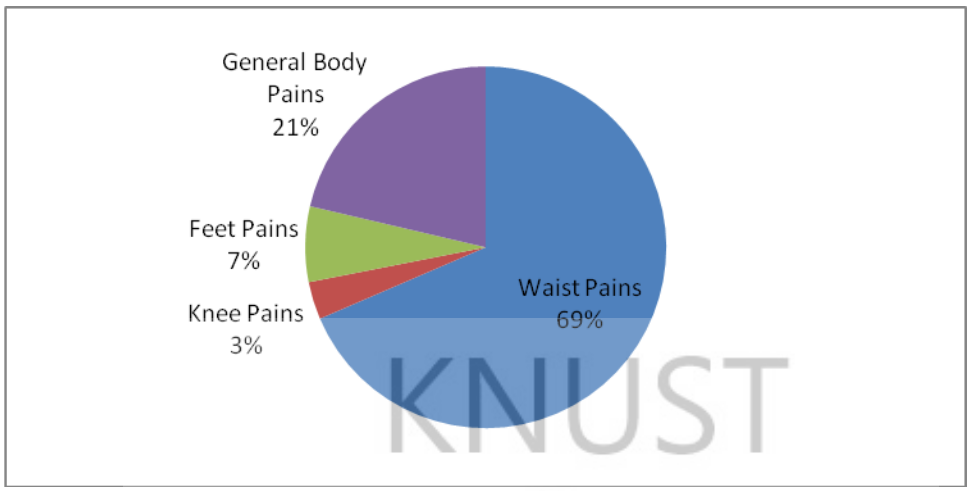
4.4.2 Chemical Hazards

Mechanics are one category of workers who use the most harmful chemicals (Granneman, 2011). It is encouraging to know that mechanics are aware of the poisonous nature of the chemicals they use. This is because 40 percent and 44 percent of respondents perceive their chemicals as highly poisonous and moderately poisonous respectively. Also, six percent view chemicals as slightly poisonous and 10 percent consider chemicals as unlikely poisonous. The likelihood of people in this last category getting seriously injured by chemicals is very high due to their ignorance on the nature of these chemicals. Unfortunately, 42 percent of respondents do not read labels on containers whereas 52 percent read before using them. Some of the poisonous chemicals used by mechanics include: paint additives, gasoline, solvents, isocynates and other volatile organic compounds. These chemicals are used in abrasive cleaning, fusing vehicle parts together and spraying. Due to the nature of chemicals, 80 percent, 86 percent and 67 percent of respondents are exposed to burns, inhalation of fumes and dust respectively. Eighty-six percent and 67 percent are exposed to smoke and fire respectively. Welders use welder's arc in soldering metals together which sparks fire and light. According to NIOH (2010) radiations of light resulting from welding activities pose significant health risks to these workers.

4.4.3 Ergonomic Hazards

Different postures which have serious health implications are used by mechanics. A combination of standing, bending, squatting and sitting is used by 65 percent of mechanics in administering their work whilst 22 percent and 13 percent do their work by standing and bending respectively. According to 54 percent of respondents, their posture is comfortable because they are used to the work, 46 percent however differ. The above notwithstanding, 89 percent complained of pains associated with their posture. These pains include: waist, knee, feet and general body pains. Figure 4.3 gives the details of the pains associated with mechanics.

Figure 4.3 Effects of Working Postures among Mechanics



Source: Field Survey 2010

Figure 4.3, portrays waist pains as the major pain associated with the activities of mechanics primarily due to their continuous posture of bending, standing, squatting and sitting. These postures also causes general body pains among 21 percent of mechanics. These pains imply the gradual loss of strength and deterioration of their health.

4.4.4 Psychosocial Hazards

The nature of work at the mechanical workshop demands that an employee is sound both psychologically and socially. This is partially the case for 65 percent of mechanics with safe work environment. The remaining 35 percent perceive their work environment as unsafe because their workplaces are high risk zones with poor environment. This notwithstanding, 90 percent of respondents are satisfied with their jobs. The marginal percentage of ten who are not satisfied with their jobs said it was tedious and not lucrative.

Socially, 23 percent have very good relationship with their employers, 58 percent had good relationships with employers. Ten percent of mechanics described the relationship as fairly good whilst nine percent had poor relationships with employers and can be an inherent reason why ten percent are not satisfied with their work. This has a tendency of

affecting productivity of work and can even lead to accidents since people's emotions are affected. Dems (2010) argued that employer-employee relationship is a form of motivation which is the stimulus to trigger productivity as a response.

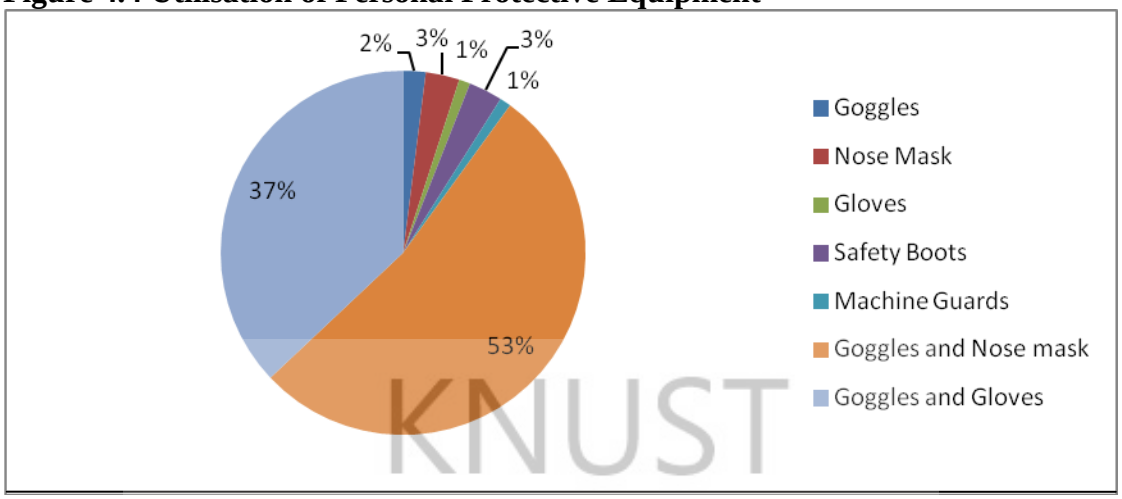
4.4.6 OHS Interventions by Employers and Employees

The work of mechanics demands that stringent measures are put in place to protect them against injuries and diseases. From the literature review, it is the work of both the employer and the employee to ensure the safety of their environment (Clewett, 2008). The safety equipment used in the workplace included fire extinguishers (23 percent), first aid box (39 percent) and wet blanket (four percent). Seventeen percent had all the three equipment and the other 17 percent did not have any of these.

Health and safety is not held in high esteem by employers since it is their responsibility to provide protective equipment at the workplace as stipulated in Section 25 of the Factories Offices and Shops Act as "if a person is employed in a process which involves excessive exposure to wet or any injurious or offensive substance he must be provided with suitable protective clothing. Only 36 percent of personal protective devices are provided by employers and 54 percent by employees.

Despite the injuries sustained by mechanics, 60 percent of them had not registered under the National Health Insurance Scheme indicating the huge medical bills paid for injuries and diseases.

Figure 4.4 Utilisation of Personal Protective Equipment



Source: Field Survey, March (2011)

With reference to figure 4.4 it is worth noting that 90 percent of respondents use only two types of protective devices which is 53 percent for goggles and nose mask and 37 percent for goggles and gloves. Training on the use of protective devices is necessary to ensure their proper use and so 54 percent of respondents are given adequate training whereas 46 percent are left to their fate. Most mechanics (56 percent) feel uncomfortable with the use of these devices and so 49 percent use them. Although mechanics perceive their noise levels to be high, none of them were found to be using ear plugs thus defeating section 26 of the Factories, Offices and Shops Act of reducing noise and vibrations as far as possible by appropriate and practicable measures.

Regarding insurance cover, 60 percent of respondents were not registered under the scheme. This implies self medication among mechanics who seek counsel from people who have suffered similar injuries and diseases as confirmed by 12 percent of respondents. Those who had the health insurance either paid nothing or less at the hospitals depending on the type of ailment.

4.4.5 Economic cost of Injuries and Diseases among Mechanics

A total of 55 percent of mechanics were involved in work related accidents such as burns, cuts and falls. Out of this, 18.4 percent sustained injuries and 52 percent fell sick due to conditions at their workplace. In addition, six percent sustained injuries and fell sick at

the same time. The type of injuries and disease sustained by mechanics is entirely different from those of drivers. The injuries and diseases included joint dislocation (11 percent), eye injury (four percent), and malaria (18.4 percent). All the above mentioned injuries have cost implications which have been outlined in table 4.9.

Table 4.9: Actual Occurrence of Injuries and Diseases among Mechanics in 2010

Type of Ailment	Frequency	Percentages	Lost Man days	Lost Earnings (GH₵)	*Cost of treatment (GH₵)
Eye infection	13	15	36	115.2	105
Malaria	16	18.4	57	182.4	224
Abdominal Disorders	4	4.6	-	-	12
Occupational Asthma	17	19.5	4	12.8	338
Chronic Cold/Catarrh	17	19.5	21	67.2	73
Whitlow	4	4.6	119	380.8	10
Injury	16	18.4	153	489.6	790
Total	**87**	**100**	**390**	**1248**	**1552**

*Cost of Treatment excludes medical bills covered by NHIS

Source: Field Survey, March (2011)

From table 4.9, it can be deduced that 18.4 percent of mechanics had malaria last year. The incidence of malaria can be associated to the filthy nature of work environment as observed by the researcher. The work environment of mechanics was littered with water sachets and polythene bags which also choked gutters in the locality. Chronic cold (19.5 percent) and occupational asthma (19.5 percent) were the most occurred diseases due to the dusty nature of the garages. Also, eye problem and whitlow rated fourth and fifth respectively. Whitlow was as a result of handling chemicals and other products without gloves. Also, small cuts or abrasions on fingers can allow entry for infections as cited by Skin Sight (2006)

Total man days lost in 2010 was 390 and using last year's minimum wage of GH₵3.20, the total amount lost due to absenteeism is GH₵1248. Damage to property was not identified as a problem among mechanics and therefore does not form part of the analysis for indirect cost. The total direct (cost of consultation, medication and hospitalization)

and indirect cost (cost of transportation- GH₵155 and lost earnings- GH₵1248) of injuries and diseases are GH₵1552 and GH₵1,403 respectively. The economic cost of injuries and diseases is therefore GH₵2,955.

4.5 Occupational Health and Safety of Beauticians

4.5.1 Physical Hazards

Unlike the categories of workers discussed above, beauticians are not exposed to noise unless the salon is located close to a source of noise. The major physical hazard of beauticians is associated with the environment. The mode of waste disposal is very crucial in determining the cleanliness of a particular place. It was realized that 29 percent of beauticians dispose-off water by open surface and 71 percent used drains. The researcher observed that most of the drains were choked and thus served as breeding places for mosquitoes. This will be evident in the discussions on the cost of injuries and diseases. Interestingly, five percent of beauticians were not ashamed to say they dispose off their refuse in drains or gutters clogging the gutters and becoming breeding places for disease vectors. This validates the study by Alfers (2009) on health and safety of traders and street hawkers in Accra. From this study, it was revealed that some traders and buyers dump polythene bags and sachet rubbers into gutters thus serving as breeding places for mosquitoes. As much as 83 percent of beauticians interviewed, dispose off their refuse at dumpsites and the remaining 12 percent do so by burning. Based on these environmental issues, the respondents rated their work environment as good (61 percent), very good (12 percent), poor (23 percent) and very poor (four percent).

4.5.2 Chemical Hazards

The use of chemicals can never be delineated from beauticians because all their products have some chemical composition. Unfortunately, most of them (62 percent) do not read labels on chemicals before use due to their level of education which dominates with 60 percent for junior high school. Some of the common chemicals in the occupation are Sodium laureth sulphate and Ammonium thioglycolate. The popular adage "ignorance is a disease" perfectly fit 45 percent of beauticians who do not perceive these chemicals as

poisonous. Thirty-six percent and 19 percent perceive chemicals to be moderately and highly poisonous respectively. Details of type of chemicals in products and the effects on the skin and health of beauticians are in table 4.10.

Also, 40 percent of beauticians had been exposed to burns, 12 percent to fumes, 19 percent to dust and 23 percent to smoke. The remaining six percent were exposed to burns and dust.

Table 4.10: Common Products, Chemical Composition and Health Risks on Beauticians

Product	Chemical Composition	Health Risk
Shampoo	Sodium laureth sulphate, triethanolamine laurel sulphate cocamido propyl betaine	Skin Inflammation
Neutralizers	Hydrogen peroxide	Skin and Eye Irritant
Conditioners	Cetrimonium chloride, cocoamido propyl betaine, betaine monohydrate	Mild irritation which causes skin wrinkles after prolonged exposure
Peroxide solutions, emulsions and creams	Hydrogen peroxide	When concentrated whitens the skin cause strong itching and pain. Cause burns when it splashes in to the eye.
Styling gels and Setting Lotion	Ethanol	Degreases the skin irritation Ingestion causes pain in the mouth and throat.
Hair Sprays and Mouses	Ethanol, hydrocarbons	Prolonged exposure causes occupational asthma and cold.
Relaxer	Sodium hydroxide, potassium hydroxide, lithium hydroxide, calcium hydroxide, guanidine hydroxide	Causes severe burns to skin and blindness to the eye
Rubber Gloves	Thiuram Mercaptobenzothiazole	Causes itching of hands
Nail Polish Remover	Methylated spirit	Excessive use causes whitlow

Source: Field Survey, March (2011) and Jill (1997)

With reference to table 4.10, it can be deduced that beauticians are highly at risk of contracting skin diseases because of the toxicity of the chemicals they use. These chemicals are used in relaxing new hair growth, washing of hair, manicure and pedicure. Direct skin contact with these chemicals or inhalation has serious health consequences such as irritations, inflammations and other skin diseases. Beauticians asserted to the fact that they easily inhale some chemicals like hair sprays and mouse since they do not use nose mask. These effects were discussed at length by Modint (2010). According to him inhalation of very toxic chemicals might lead to direct dizziness, nausea, skin diseases, irritation and in the long run cause severe illnesses.

4.5.3 Ergonomic Hazards

The commonest posture in salons is standing, which according to 87 percent of beauticians causes a lot of discomfort. Standing for long hours by beauticians and adopting awkward positions like twisting, bending, sitting on stools without a back rest or leg support predominantly causes lower back pains confirming with Sandal and Reeve (1997). Lower back pain was experienced by 43 percent of respondents and general body pains by 28 percent whilst 15 percent experienced arm pains and the rest experienced neck pains. Almost all respondents have leg discomfort after work each day. As many as 25 percent do not have access to water and so fetch water from between 100metres and 600meters. This also affects their necks because the size of the smallest bucket and gallons they carry is 34-litres.

4.5.4 Psychosocial Hazards

Hairdressers work for long or difficult hours, which results in stress. Stress can cause fatigue and have a negative influence on productivity and the quality of work, and on personal health and safety (Jill, 1997). From the study, the minimum number of hours beauticians work is 8 hours by 12 percent of respondents and the maximum is 16 hours by four percent of respondents. Majority (68 percent) of respondents work for 12 hours followed by 14 hours hours of work by 16 percent of beauticians during peak times like festive seasons.

Considering fatigue in the occupation, it is necessary for employees to enjoy good work relationships with their employers. Close to half of respondents (47 percent) had good relationships with their employers whilst 13 percent had poor relationships. Comparing with the mechanics, it can be inferred that mechanics enjoy better relationship with their employers. This is because of the complexity of women's character among the beauticians and the easy going nature of men among the mechanics. Also, 17 percent of respondents are not satisfied with their work having similar reasons as those of drivers and mechanics. Aside these reasons, two other reasons for job dissatisfaction came to the fore as poor treatment from superiors (six percent) and general lack of interest (five percent)

4.5.5 OHS Interventions by Employers and Employees

Safety equipment at workplaces were not found as an immense part of beauticians. Only two respondents had fire extinguisher at their work places and 58 percent had first aid boxes. The use of gloves was also seen as common with 90 percent of beauticians for relaxing hair whilst 56 percent have access to gloves and 16 percent nose mask. The inadequacies of nose masks in the salons are an indication and confirmation of asthma symptoms among respondents. There is a close balance in the provision of personal protective equipment by employers (53 percent) and employees (47 percent). The essence of protective devices are recognized by beauticians because 65 percent of them use the device despite the fact that 76 percent feel uncomfortable using it. However, 60 percent of employers do not enforce the use of protective devices. The survey revealed that there were no stringent rules put in place to safeguard the health of workers. This is discerned from the common phrase of employers that "You work without a protective device at your own risk". This statement is not enough to keep workers on their toes. It was once again realized that there were no emergency response strategies to cater for those who get injured before taking them to the hospital.

None of the employers interviewed had registered their workers under the National Health Insurance Scheme as done by most formal employers. This is because the Health Insurance Act made membership optional for non-formal sector workers who represent the bulk of the population and ensured a compulsory deduction of 2.5 percent from the payroll of formal sector workers (Brugiavini and Pace, 2010).

A total of 62 percent of beauticians have been registered under the NHIS, with 18 percent not renewing after the first payment. Those who had not registered gave reasons such as: it is expensive, low coverage for drugs, substandard treatment and time constraint. Only 4.7 percent of medical bills are paid by employers, with 32.6 percent being covered by the Health insurance. The greater percentage of 62.8 percent is paid by the workers themselves and very few respondents (ten percent) receive compensation in the form of sick leave (five percent) and cash (five percent) from their employers.

4.5.6 Economic Cost of Injuries and Diseases

The total number of accidents recorded in this category last year was 40 the least accidents among the various categories with nine percent sustaining injuries. The injuries sustained were arm and leg injury (9 percent). Whitlow which is an infection of the finger was also recorded among 11.7 percent of beauticians. Forty-seven percent of beauticians fell sick last year as a result of their work leading to 410 lost man days. Table 4.11 shows the type of ailment and its associated cost.

Table 4.11: Actual Occurrence of Occupational Injuries and Diseases among Beauticians in 2010

Type of Ailment	Frequency	Percentage	Lost Man days	Lost Earnings (GH₵)	*Cost of treatment (GH₵)
Eye infection	6	7.8	35	112	55
Malaria	22	28.6	217	694.4	466
Abdominal Disorders	6	7.8	9	28.8	20
Occupational Asthma	15	19.5	37	118.4	234
Chronic Cold/Catarrh	12	15.6	7	22.4	21
Whitlow	9	11.7	6	19.2	20
Injuries	7	9.0	99	316.8	135
Total	**77**	**100**	**410**	**1,312**	**951**

*Cost of Treatment excludes medical bills of those covered under NHIS

Source: Field Survey, 2011

From Table 4.11, malaria affects 28.6 percent of beauticians partially due to the choked gutters as discussed above coupled with stress and fatigue. Asthma and chronic cold come after malaria with 19.5 percent and 15.6 percent respectively.

The incidence of occupational asthma has been confirmed by several studies, of which one by Akpinar-Elci, Cimrin and Elci (2002) is very pronounced. They observed occupational asthma as an important risk among hairdressers.

Total lost man days for 2010 were 410 and with the same year's minimum wage of GH₵3.20, amount lost due to absenteeism was GH₵ 1312. The overall direct cost made up of cost of consultation, medication and hospitalization was GH₵951 and indirect cost made up of transportation cost (GH₵104.3) and lost earnings (GH₵1,312) was GH₵1,416.3. Therefore the economic cost of injuries and diseases for the beauticians in 2010 was GH₵2367.3

4.6 Occupational Health and Safety among Porters

4.6.1 Physical Hazards

Porters are a unique category of workers who experience extreme noise as 94 percent are exposed to very loud noise above eight hours. The source of this noise according to porters is from vehicles, traders and public address systems. Majority of porters (68 percent) perceive noise levels to be very loud, 24 percent as loud and eight percent consider it as moderate. Those who perceive the noise level to be moderate claimed it was normal implying they were used to the environment.

4.6.2 Ergonomic Hazards

The continuous posture of carrying and pulling heavy loads is done on equal basis by all porters. These postures according to 78 percent of respondents are not comfortable and thus cause pain to 94 percent of them. The major pain associated with the work of porters, is waist pains (47 percent) and general body pains (34 percent). Chest pains are experienced by eight percent, knee pains by seven percent and the least (four percent), arm pains.

4.6.3 Psychosocial Hazards

Approximately 50 percent of porters are not satisfied with their work. Thirty percent of those who are not satisfied attribute it to the low income nature of the work, and the remaining 20 percent to the tediousness of the work. Monthly average income for porters was estimated at GH₵88.6 which is far less than the monthly minimum wage of GH₵111.9. This put them under a lot of psychological stress of trying to manage their meager wage.

The work environment as well as places of abode of respondents is highly unsafe. Forty-eight percent of porters live in slums like Sekondi zongo, Kwesimintsim zongo and Effiakuma zongo. Twelve percent sleep in shops in and around the market circle with the rest sharing rooms with friends around the Central Business District. Those who sleep in the market do so because they do not have places to sleep and also to be able to carry loads when traders and other travelers arrive in the middle of the night. Almost half of the

females (46.7 percent) had been sexually harassed by other male porters and area boys who deceive them and take advantage of them, confirming studies by Opare (2003).

4.6.4 OHS Interventions by Employers and Employees

The study revealed that, 18 percent of porters have registered under the National Health Insurance Scheme with four percent not renewing after the first payment. Those who had not registered were of the view that the insurance premium was expensive and so they could not afford it. Considering the hazard these people are exposed to, it is necessary to put measures in place to ensure their safety. Details of measures to ensure their health and safety are discussed in the next chapter.

4.6.5 Economic Cost of Injuries and Diseases.

The highest number of accidents (68 percent) in the study was recorded among porters with 37.6 percent sustaining injuries. Injuries sustained include neck injury (13.5 percent), arm injury (10.5 percent) and leg injury (12.9 percent). A greater proportion (78 percent) of porters had fallen sick last year due to their work environment. Out of this, 51.3 percent were absent from work below one month and 13 percent were absent between two and three months. Common diseases include Malaria (26.4 percent), Abdominal Disorders (15.2 percent) and Skin rashes (7.2 percent). Details of injuries and diseases as well as their costs can be found in table 4.12

Table 4.12: Actual Occurrence of Occupational Injuries and Diseases among Porters

Type of Ailment	Frequency	Percentage	Lost Man days	Lost Earnings (GH¢)	*Cost per treatment (GH¢)
Malaria	33	26.4	168	537.6	636
Abdominal Disorders	19	15.2	36	115.2	109
Skin Rashes	9	7.2	89	284.8	90
Chronic Cold/Catarrh	3	2.4	-	-	9
General Bodily Pains	14	11.2	117	374.4	283
Injuries	47	37.6		-	-
Total	**125**	**100**	**410**	**1312**	**1127**

*Cost of Treatment excludes medical bills of those covered under NHIS

Source: Field Survey, March 2011

Total number of lost days was 410; amount of money lost due to absenteeism was GH¢1,312 with an associated direct cost (cost of consultation, medication and hospitalization) of GH¢1,127 and indirect cost (transportation- GH¢104 and lost earnings- GH¢1,312) of GH¢1,416. Damages to properties were not found among porters hence the economic cost of injuries and diseases is GH¢2,543.

4.7 Occupational Health and Safety of Informal Service Workers

The ongoing discussions depict that the informal service workers in the Sekondi-Takoradi Metropolis are exposed to an array of hazards including ergonomic hazards, physical hazards, chemical hazards and psychosocial hazards. It is evident from the above that, porters are the only category that is not exposed to chemicals. Table 4.13 which includes multiple responses gives a summary of hazards faced by the workers.

Table 4.13: Relationship between Occupations and Health Hazards Exposure in Percentages

Hazards / Category	Ergonomic Hazards	Chemical Hazards	Physical Hazards	Psycho-social Hazards	Total
Drivers	69	100	94	39	302
Beauticians	87	62	98	53	300
Mechanics	89	86	96	49	320
Porters	94	0	68	24	186
Total	**339**	**248**	**356**	**165**	**1108**

Source: Field Survey, 2011

From table 4.13, physical hazard is the most exposure experienced by all work categories whilst psycho-social hazard though experienced by all workers was the least of all hazard exposure. It is also evident from the table that chemical hazards are peculiar only to drivers, beauticians and mechanics.

After identifying the risk exposure of respondents in broad terms, it is necessary to know the specifics of each of these hazards. Therefore table 4.14 indicates the kinds of risk exposure across the different work types.

Table 4.14: Risk Exposure of all Work Categories in Percentages

Occupation / Risk	Drivers	Beauticians	Mechanics	Porters	Total	Percentage (%)
Noise	94	0	96	100	**290**	**17.24**
Vibration	0	0	33	0	**33**	**1.96**
Burns	12	80	80	0	**172**	**10.22**
Smoke	19	41	86	0	**146**	**8.68**
Dust	23	63	67	0	**153**	**9.09**
Fume Inhalation	44	48	86	0	**178**	**10.58**
Fire	2	5	67	0	**74**	**4.40**
Stress	76	68	10	0	**154**	**9.16**
Sexual Abuses	0	0	0	14	**14**	**0.83**
Filthy Environment	19	27	22	100	**168**	**9.99**
Chemicals	100	100	100	0	**300**	**17.84**
Total	**389**	**432**	**647**	**214**	**16 82**	**100.00**

Source: Field Survey, March 2011

From table 4.14 it can be emphasized that mechanics and beauticians are the most exposed to occupational hazards. The major risk associated with all categories except

porters is chemicals; this is because most of the workers depend on chemicals to deliver their service. It was also realized that most mechanics used fire in soldering appliances thus exposing them to fire and fume inhalation.

Table 4.15: Actual Occurrence of Occupational Injuries and Diseases among Informal Service Workers in Percentages

Ailments	Drivers	Mechanics	Beauticians	Porters	Total
Malaria	43	18.4	28.6	26.4	116.4
Abdominal Disorders	8.1	4.6	7.8	15.2	35.7
Skin Rashes	-	-	-	7.2	7.2
Chronic Cold/Catarrh	12.2	19.5	15.6	2.4	49.7
General Body Pains	18.1	21	-	11.2	50.3
Eye Infection	-	15	7.8	-	22.8
Occupational Asthma	16.2	19.5	19.5	-	55.2
Whitlow	-	4.6	11.7	-	16.3
Injuries	20	18.4	9	37.6	85

Source: Field Survey, March 2011

The dominant ailment among informal service workers is malaria followed by injuries. The highest injury by 37.6 percent of informal service workers was recorded among porters. Skin rashes were peculiar to porters whilst whitlow was peculiar to mechanics and beauticians.

The above mentioned injuries and diseases have cost implications which impact the lives of workers negatively. Table 4.16 itemizes the different costs components associated with injuries and diseases.

Table 4.16: Cost Implications of Injuries and Diseases among Informal Service Workers in 2010

Variable	Drivers (GH₵)	Mechanics (GH₵)	Beauticians (GH₵)	Porters (GH₵)	Total (GH₵)
Direct Cost					
Cost of Treatment	1,555	1,552	951	1,127	**5,185**
Indirect Cost					
*Lost Man days	278	390	410	410	**1,488**
Lost Earnings	889.6	1,248	1,312	1,312	**4,761.6**
Transport Cost	202	155	104.3	104	**565.3**
Damages to Properties	1,180	-	-	-	**1,180**
Economic Cost	**3826.6**	**2955**	**2367.3**	**2543**	**11,691.9**

*Lost Man Days not in GH₵

Source: Field Survey, March 2011

From table 4.16, it can be deduced that the highest lost man days was 410 among beauticians and porters with an associated lost earnings of GH₵1,312. The least economic cost of GH₵2367.3 was recorded among beauticians and the highest of GH₵3826.6 among drivers. The total economic cost of injuries and diseases among informal service workers for 2010 was GH₵11,691.9.

4.8 Institutional Records of Occupational Accidents and Injuries

Occupational health and safety even at the formal level has not been the best since from the study a number of accidents have been recorded more importantly at the national level. However at the regional level, it was realized that accident levels had been reducing since 2006 except for 2009 and reduced again in 2010.

Table 4.17: National and Regional Accidents (2005-2010)

Year	Non-Fatal Accidents		Fatal Accidents		Compensation (GH¢)
	National	Regional	National	Regional	
2005	-	31	-	-	
2006	361	26	6	3	**374,114.72**
2007	404	11	52	1	**2,145,791.73**
2008	423	6	4	1	**3,325,977.19**
2009	477	9	16	2	**154,638.32**
2010	468	5	14	-	**614,321.96**
Total	**2133**	**88**	**92**	**7**	**1,357,654.17**

Source: National Labour Office and Department of Factories Inspectorate, Takoradi

Compensations are paid to injured workers by the Labour Department. The amounts in Table 4.17 represent compensations paid to both formal and informal workers at the national level. None of the workers interviewed had ever benefited from the compensation.

With the informal service sector, the survey revealed that 16 percent of workers report injuries to their employers, parents or the police in the case of drivers. However, 84 percent of all employees do not report occupational injuries to anybody. Their main reason was the fact that nothing will actually be done for them. This confirms the assertion by Joubert (2002) that a large number of injuries and diseases caused by workplace hazards are not reported.

4.8 Institutional Response to OHS

All institutions covered by the study had stakes in ensuring the health and safety of workers. These institutions acknowledged their roles as far as health and safety is concerned and also play collaborative roles with other institutions but very little has been achieved.

4.8.1 Department of Factories Inspectorate (DFI)

The DFI enforces the Factories, Offices and Shops Act, ACT 328 to ensure the health and safety of workers to the highest degree. The operational areas of the Western Regional DFI extend from Takoradi to Samreboi then to Kasoa in the Central Region. This is

because there is no office in the Central Region thus the Western Regional office serves their needs.

They ensure safety by regular inspection of workplaces. Inspections are organized at least three times a year to every registered company. This implies that an organisation that fails to register with them by paying their registration fees receives no attention from them.

The DFI plays an advisory role more than an enforcement role though they have the legal backing to enforce. According to the regional director, there is a shift in the role due to the employment situation in the country so they advise employers to try and keep pace with the standards so that they do not close down.

The survey revealed that decentralization had not taken place in the department especially at the DFI in the STMA because most decisions like the department's budgeting are centrally determined by the central administration in Accra. This leads to under estimation of the needed resources. For example, in the year 2010, an allocation of GH₵ 919.69 was made to the department at the regional level which according to the director is woefully inadequate because to be able to undertake an effective inspection within a year, an amount of GH₵ 3,500 will be required.

Aside funds, the department is poorly served in terms of infrastructure and staff. It has no vehicle for field inspection and no computer for data entry, no wonder there was a lot of difficulty in getting data from them. There are only four technical staff instead of the eight they require giving a backlog of four. This explains why the department neglects the informal sector especially the service sector.

4.8.2 Workmen's Compensation

The administration of the workmen's compensation is by the Department of Labour. From the survey, it was realized that accidents are reportable when victims are

incapacitated for three consecutive days. According to the Factories, Offices and Shops Act,1970 (Act 328), to enjoy the compensation injured persons must report accidents within seven days to the factories inspectorate which will in turn direct them to the labour department. After reporting, they fill a form and fill another one after recovering from the sickness for compensation to be made. This regulation however is disregarded according to the regional DFI director because workers prefer to report injuries to the Labour Department for a faster processing of compensation. In the informal service sector where the DFI and labour department are not functional, the employers on their own accord either pay or ignore the issue of compensation so the study revealed that injured employees do not receive compensation. The only form of compensation is sick leave or a meager amount of money to offset some hospital bills. As much as 97 percent of injured employees received no compensation after injury. Those who received cash receive amounts ranging from GH₵10 to GH₵50 which is nowhere near the hospitals bills they pay. This confirms Burton's (2009) definition of informal sector as not having any entitlements for social benefits.

4.8.3 Trade Union Congress

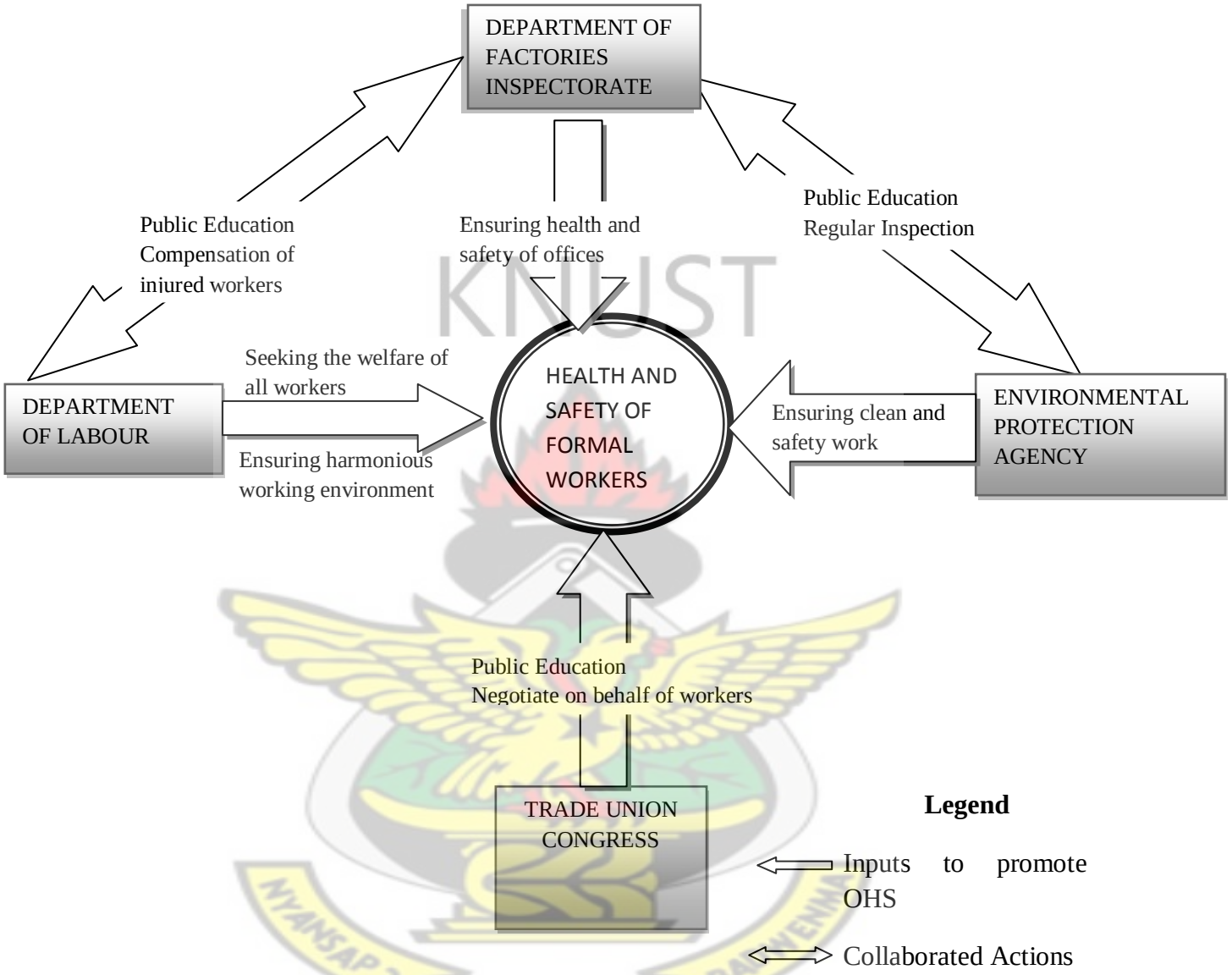
From the survey, 183 employees representing 41.6 percent all respondents are paid below the current minimum wage of GH₵3.73 a day. Also, five percent also received unfair treatment from their employers. Another major problem relates to the termination of employees appointment in unfair manners.

The role of the TUC is to represent organizations on OHS issues both local and international, seek the welfare of workers and educate them and negotiating on their behalf. According to the General Secretary of TUC, their work is made difficult because the government does not see OHS as a major issue since there is no OHS policy. They find it difficult to reach the informal sector especially the service sector due to its disorganized nature and thus the neglect of the sector. It can therefore be said that until the sector is dealt with by policy makers their health and safety will always be a problem.

4.9 Inter Agency Collaboration in Occupational Health and Safety

It has been widely acknowledged that OHS requires an inter-agency and inter-sectoral approach. It was realized that all agencies covered in the study had links with each other. However, the Department of factories Inspectorate in Takoradi had a conflicting role with the Environmental Protection Agency (EPA). This is because DFI saw the EPA to be intruding in its affairs to the extent that employers call EPA for workplace inspection instead of the DFI. This problem is as a result of no clear cut roles and responsibilities of both departments and the overlapping nature of their work. Figure 4.5 portrays a simplified layout of interaction between the various institutions for ensuring OHS in the formal sector as discovered from the field survey.

Figure 4.5 Inter Agency Collaboration in Occupational Health and Safety



Source: Authors Construct

It is evident from Figure 4.5 that there is a good institutional set up for promoting health and safety of workers in the formal sector. In this set up activities like public education, sensitization, regular inspection and negotiation on behalf of workers are all geared towards promoting workers welfare and ensuring harmonious work environment. This collaboration if transferred to the informal sector will help curb the safety problems at informal workplaces.

CHAPTER FIVE

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

5.1 Introduction

This final chapter presents the key findings emanating from the data analysis. Based on these findings, recommendations have been made to inform policy. The chapter ends with a conclusion for the entire study.

5.2 Summary of Key Findings

From the survey, the following major findings have been outlined. This has been done according to the objectives of the study.

5.2.1 Nature and Operations of Informal service sector

- The informal service sector in STMA is dominated by males. The survey revealed that all drivers were males, 96 percent of mechanics and 70 percent of porters were males. Only five percent of beauticians were also males.
- The sector employed labour as young as 17 years and as old as 73 years. Most (43.3 percent) respondents however were between the ages of 30 – 49.
- It was realised that education was not a requirement in the sector though majority of respondents had some level of education at least to the basic level and 13.5 percent were illiterates
- Employment in the informal service sector is basically done on full-time basis and work is done for a maximum of 16 hours a day.
- Part-time workers constituted 6.3 percent of respondents and were also involved in other informal activities like trading and construction.

5.2.2 Key health and safety risks associated with the informal service sector

Chemical hazards

- Beauticians are the most exposed to chemical hazards, In spite of the fact that nearly all raw material used by beauticians are chemicals, most of them (62 percent) do not read labels on chemicals before use due to their level of education. Aside, 45 percent of them do not perceive these chemicals as poisonous

- Even though a high proportion of mechanics (86 percent) have high awareness to the fact that the chemicals they use for their activities are poisonous, a sizeable proportion of 42 percent do not read the labels imprinted on them.

- Forty-four percent of drivers are exposed to fumes containing carbon monoxide, nitrogen oxides and sulphur dioxide.

Ergonomic hazards

- All workers interviewed were affected in one way or the other by their working postures. About 57.5 percent of respondents from all the categories of work do not observe both public holidays and break periods.

- Ergonomic hazards result in musculoskeletal disorders among drivers with specifically 68.8 percent of them suffering from backaches and waist pains and 4.5 percent from pulled muscle.

- A combination of standing, bending and sitting results in waist, knee, feet and general body pains among 89 percent of respondents.

- 94 percent of porters experience severe body pains due to the continuous posture of pulling trucks and carrying heavy loads.

Physical hazards

- The major physical hazard drivers are exposed to are constant noise from vehicles (90 percent) and working environment including those from traders and passengers (eight percent). Also a greater percentage of drivers (59.6 percent) perceive the noise at the workplace to be loud whilst a marginal percentage 4.3 perceive it to be low.

- Approximately 51 percent of mechanics experience very loud noise, 28 percent experience loud noise and 17 percent experience a moderate level of noise.

- Porters experience extreme noise all day. Available data revealed that 68 percent of them perceive noise levels to be very loud.

- The incidence of malaria ranked first among all categories of work as a result of filthy work environment which served as breeding places for mosquitoes.

Psycho-social hazards

- Drivers are susceptible to psycho-social hazards both from passengers and their employers. From the survey, there is a poor relationship between 21 percent of drivers and their employers.

5.2.3 Economic costs of occupational health injuries and diseases in the informal service sector

- The economic cost of injuries and diseases among drivers was valued at GH₵3,826.6 for 2010. This is made up of both direct (GH₵1,555) and indirect costs (GH₵2,271.6) of injuries and diseases excluding medical cost covered by

NHIS. Damage to properties which is part of the indirect cost was also valued at GH₵1,180.

- The economic cost of injuries and diseases for mechanics for 2010 was GH₵2,955, total direct cost excluding medical costs covered by NHIS and indirect cost of injuries and diseases were GH₵1,552 and GH₵1403 respectively.

- The economic cost of injuries and diseases among beauticians was GH₵2,584.3 made up of GH₵951 for direct cost of Illness and GH₵1,633.3 for indirect cost excluding medical cost covered by NHIS.

- The direct cost and indirect costs of injuries to porters were GH₵1,127 and GH₵ 1,416 respectively. Hence the economic cost of injuries and diseases is GH₵2,543.

- It was also realised that the National Health Insurance Scheme was not adequately patronized by the informal service workers. This is evident in the total of 61 percent of beauticians who had been registered under the NHIS, with 18 percent not renewed after first payment. 82 percent of porters, 45 percent of drivers, 60 percent of mechanics had also not registered under the scheme.

- Again, the survey revealed that informal service workers do not receive any form of compensation from the labour department. It is only out of a kind heart of some employers that they are given sick leave and sometimes an amount of money to offset some of their medical bills

5.2.4 Interventions by government, employers and employees

- The survey revealed that there is no OHS policy in Ghana. There is the need for a national OHS policy to ensure safety at workplaces.

- There is poor coordination of the activities among OHS institutions within the metropolis and the nation at large because of the absence of a national policy to prescribe appropriate guidelines to these institutions. This leads to the duplication of efforts and conflicts among institutions due to the lack of clearly defined roles.

- The OHS institutions in the country are under resourced and are limited in their service delivery. All over the country, there are only five offices of the Department of Factories Inspectorate in only five regions. The national office has only one vehicle for its inspection whilst the Takoradi office has none and yet is expected to go on regular inspection in the formal sector

- Inspections and supervision of institutions was limited to only formal sector institutions and other corporate private institutions. These institutions are required to register with the DFI and EPA before any inspection can be undertaken in the institutions. It is also worth noting that the DFI because of its limited staff and logistics visits the registered institutions a maximum of twice a year.

- The availability of PPE and the use of workplace protective equipment among informal service workers in the STMA are not encouraging. As the survey indicated that 42 percent of drivers do not use their seatbelts and nine percent had no seat belts in their vehicles. As much as 20 percent of respondents drive without a driver's license. Goggles (53 percent) and gloves (90 percent) were the most used PPE's among mechanics and beauticians respectively.

- There is a collaborative effort between both employers and employees in the provision of PPE's. Among mechanics 36 percent of personal protective devices are provided by employers and 54 percent by employees.

- Training of workers on OHS issues is non-existent in the informal service sector.

5.3 Recommendations

With reference to the effects of occupational hazards on employees, employers, society and the nation at large, there is the need to recommend policy options and alternatives. These recommendations should be implemented by government and all other OHS stakeholders, employers and employees within the short term which is between the next three years to help reduce if not to completely eliminate the adverse effects of occupational hazards. The recommendations include the following:

5.3.1 Role of Government

- Formulation and Review of OHS Policy and Act

  The formulation of a comprehensive OHS policy will render policy makers and all OHS institutions a sense of direction in their service delivery. This should be done to safeguard the health of workers not only in the formal sector but informal sector as well. There is also the need for policy makers to review the Factories, Offices and Shops Act and ensure its strict adherence to deter non compliance to its provisions.

- Reforms of OHS Institutions

  There is the need for government to set up an institution which will be solely in-charge of national OHS issues, headed by a senior official in-charge to establish mechanisms for monitoring the success of occupational health and safety programmes.

- Effective Collaboration among OHS Institutions

  All OHS institutions should initiate a concerted effort to address the health and safety hazards and the risks of occupational illness and injury that are associated with the informal sector to reduce the risks to an acceptable level. They should also develop a multidisciplinary approach to occupational health and safety that permits the continuing evaluation of potential workplace hazards and the best way to mitigate the causes and effects of these hazards.

- Regular Supervision by OHS Institutions

  There is the need for regular supervision by all OHS institutions. This supervision should not only be restricted to formal workers but the informal workers like drivers, beauticians, mechanics and porters. The national OHS institution should also monitor the activities of the decentralized institutions and ensure they live up to expectation.

- Awareness Creation

  The participatory approach used in Thailand can be adopted by government to ensure that the stakeholders in informal sectors, especially those with insufficient concepts and impractical guidelines concerning how to handle OHS are adequately trained. This training will enable informal workers to learn concepts for improving work conditions. This can be done through awareness creation using advertisements, radio and television talk shows as well as drama. This could be done by employers or OHS institutions, non-governmental organizations and civil societies.

5.3.2 Role of Employers

- Employers should provide PPE's for their employees.
- They should also train employees on the use of PPEs.
- Employers should punish employees who do not use the PPEs and provide incentive packages for those who use them.

- They should also insist that employees register under the National Health Insurance Scheme to safeguard their health in cases of accidents.

5.3.3 *Role of Employees*

- They should place their safety above their work and insist their employers provide them with PPE.
- Employees should co-operate with their employers in the health and safety measures they put in place and also work safely to protect themselves and others from injury
- All employees must endeavour to register under the National Health Insurance Scheme.

5.3.4 Role of Associations

- Associations should set rules and regulations that insist on the usage of PPEs by all members.
- They should also monitor activities of members and penalize employers whose employees go contrary to the set rules and regulations.

5.3.6 Recommendations for Future Research

- An in-depth survey on economic cost of injuries and diseases should be considered for future studies.
- There is the need to undertake similar studies in the other sectors of the economy (industrial and agriculture) to understand and appreciate OHS issues within the sectors.

5.4 Conclusion

The bulk of labour force in the Sekondi-Takoradi Metropolis can be found in the informal sector more especially, the informal service sector. As long as population increases and there is unemployment in the country, employment in the informal sector will increase.

This calls for a comprehensive OHS policy to emphasize the health and safety needs of workers.

Available literature from chapter two revealed the neglect of the sector for so long a time. This was confirmed by the empirical data from the informal service workers in the Sekondi-Takoradi Metropolis and was realized that all activities of OHS institutions were geared towards the formal sector. The economic cost of injuries and diseases as indicated in the analysis is alarming and therefore requires immediate attention from employers and employees through the use of PPE's, and the government by the formulation and implementation of an OHS policy.

It is therefore hoped that if the recommendations in this chapter are implemented the health and safety of workers especially the informal service sector will be ensured and Ghana's Health for All policy will be achieved.

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APPENDICES

Appendix I

SAMPLE SIZE CALCULATION

Calculation of sample size was based on the mathematical formula below:

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

Where *n* is the sample size, *N* is the sampling frame (total number of informal service workers in the STMA) and *e* is the margin of error. The total number of informal service workers in the Metropolis is estimated at 39,800. A margin of error of 5 percent was used.

$$n = \frac{39800}{1 + (39800\ x\ 0.05^2)}$$

n=396

Therefore the calculation was approximated to 400 workers who were selected using the simple random sampling. In addition to this 40 employers were also interviewed from the beauticians and mechanics sub groups.

Appendix II

RESEARCH INSTRUMENTS

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF ARCHTECTURE AND PLANNING
DEPARTMENT OF PLANNING

TOPIC: OCCUPATIONAL HEALTH AND SAFETY OF THE INFORMAL SERVICE SECTOR IN THE SEKONDI-TAKORADI METROPOLITAN ASSEMBLY

Please be assured that your responses will be treated with utmost confidentiality.

SECTION I: QUESTIONNAIRE FOR EMPLOYEES (BEAUTICIANS)

A. Background Data

1. Age:
2. Sex: [ ] Male [ ] Female
3. Marital Status [ ] Married [ ] Single [ ] Divorced [ ] Widowed
4. Educational level
   [ ] Illiterate [ ] Primary [ ] JHS [ ] SHS [ ] Technical [ ] Vocational
5. Are you the breadwinner of your family? [ ] Yes [ ] No
6. If yes, how many dependents do you have? [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] Others specify …….
7. How many of them are of school going age? [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] Others specify …….
8. How many are aged (60 years and above)? [ ] 1 [ ] 2 [ ] 3 [ ] Others specify ……..
9. Employment Status
   [ ] Full Time [ ] Part time [ ] Temporary [ ] Casual
10. Number of work hours per day
    [ ] 4 hours [ ] 6 hours [ ] 8 hours [ ] 12 hours
11. Earnings: [ ] Daily [ ] Weekly [ ] Monthly
12. How much do you earn a month? ……..

13. Number of years of employment
    ……

B. Health and Safety Risks

14. Do you have break periods for lunch? [ ]Yes [ ] No
15. If yes, how many hours do you observe?

[ ] Below 15 mins [ ] Between 15 and 30 mins [ ]Between 30 and 45 mins. []Between 45 and 1 hour

16. Where do you have your lunch?

……

17. Do you wash your hands before eating? [ ] Yes [ ] No
18. Do you observe public holidays? [ ]Yes [ ] No
19. What kind of health hazard are you exposed to?
20. How many hours of sleep do you observe daily? ……

a. Physical Hazards

Do you have off days in a week or month? ……

21. Do you have access to water? [ ] Yes [ ] No
22. How do you dispose off your waste a. Water [ ] Open surface [ ] drainage
    b. Refuse [ ] drainage [ ] dump sites

24. How do you rate your work environment? [ ] Good [ ] Very Good [ ] Poor [ ] Very Poor

b. Chemical Hazards

22. What type of chemicals do you use?

……

23. How poisonous are the chemicals you work with? *(Ranking based on WHO's standard)*
    [ ] Highly Poisonous [ ] Moderately Poisonous [ ] Slightly Poisonous [ ] Unlikely Poisonous
24. Do you read labels on chemicals before use? [ ] Yes [ ] No
25. Are you exposed to i. burns [ ] Yes [ ] No
    ii. Fumes inhalation? [ ] Yes [ ] No
    iii. Smoke? [ ] Yes [ ] No
    iv. Dust? [ ] Yes [ ]No
    v. Fire? [ ] Yes [ ]No

Ergonomic Hazards

26. What is your usual posture at work?
    [ ] Standing [ ] Bending [ ] Sitting [ ] Squatting
27. Is your posture comfortable? [ ] Yes [ ] No
28. Does your posture cause any pain in the body? [ ] Yes [ ] No
29. If yes which part of your body is affected?

……

30. Which of the following safety equipment do you have at your workplace?
    [ ] Fire Extinguisher [ ]First Aid Box [ ] Wet Blanket [ ] Shower [ ] Others

31. Which of the following Personal Protective Equipment do you have at your workplace?
[ ] Goggles [ ] Nose mask [ ] Gloves [ ] Safety Boots [ ] Ear Protectors [ ] Machine Guards [ ] Safety over coat [ ] Masks [ ] Others (Please specify)
32. Who provides the Personal Protective Equipment?
[ ] Employer [ ] Self [ ] Government [ ] Others *(Please specify)*
33. Are you trained on the use of the Personal Protective Equipment? [ ] Yes [ ] No
34. Do you think the protective devices are enough? [ ] Yes [ ] No
35. Are the protective devices comfortable? [ ] Yes [ ] No
36. Do you use the Personal Protective Equipment?

Psycho Social Hazards

37. Are you satisfied with your work? [ ] Yes [ ] No
38. If No, why?.....
39. How safe is your work environment? [ ] Very safe [ ] Safe [ ] Unsafe
40. What is the relationship between you and your employer?
[ ] Very Good [ ] Good [ ] Fair [ ] Poor
41. Whom do you report occupational injuries to?
[ ] Supervisor [ ] Employer [ ] Nobody [ ] Others (Please specify)
…….....

C. Cost of Occupational Injuries And Diseases

42. Have you been involved in any accident in the past year? [ ] Yes [ ] No
43. How many times were you involved in an accident last year? [ ] 1 [ ] 2
[ ] 3 [ ] 4 [ ] 5 [ ] More than 5
44. Did you sustain any injuries as a result of the accidents? [ ] Yes [ ]No
45. If yes, what type of injury did you sustain?
……
……
46. Have you fallen sick as a result of your workplace hazard? [ ] Yes [ ] No
47. Did the disease or sickness keep you away from work? [ ]Yes [ ] No
48. If yes, how long did you stay away from work?
[ ] below 1 month [ ] between 2 and 3months [ ] between 3 and 4 months
[ ] between 4 and 5months [ ] between 5 and 6 months [ ] above 6 months [ ] Others *(Please specify)*…….
49. What type of disease were you affected with? ……
50. What was the medical cost of the injury and disease?
[ ] Below GH₵ 20 [ ] Between GH₵20 and GH₵40 [ ] Between GH₵40 and GH₵60 [ ] Between GH₵60 and 80 [ ] Between GH₵80 and GH₵100 [ ] Above GH₵100

51. Are you registered under the National Health Insurance Scheme? [ ] Yes [ ]No
52. If No, why? [ ] It is expensive [ ] Long queues at the hospitals
    [ ] Low coverage for drugs [ ] Others (Please Specify)…….
53. Who paid the medical bills?
    [ ] Self [ ] Employer [ ] Both [ ] Health Insurance
54. Were you compensated when you got injured? [ ] Yes [ ]No
55. If yes, in what form did the compensation take?
    [ ] Cash [ ] Sick leave [ ] Others (specify)……
56. Please complete the table below

Date	**Injury**	**Medical Costs**	**Transportation/ Nonmedical Costs**

SECTION II QUESTIONNAIRE FOR EMPLOYERS (BEAUTICIANS)

A. BACKGROUND INFORMATION

1. Age……
2. Sex [ ] Male [ ] Female
3. Educational Level
   [ ] Illiterate [ ] Primary [ ] JHS [ ] SHS [ ] Technical [ ] Vocational
4. Number of employees ……
5. Proportion of employees who are: a. Men ……
   b. Women …….
   c. Disabled ……..
6. Number of work hours per day: [ ] 4 hours [ ] 6 hours [ ] 8 hours [ ] 12 hours
7. How did you acquire the land on which you operate? ……..
8. If you pay rent, how much do you pay every month? ……
9. Earnings: [ ] Daily [ ] Weekly [ ] Monthly
10. How much do you earn a month? ……..
11. Number of years of employment ……..….
12. Do you belong to any association? [ ] Yes [ ] No
13. What are the roles/benefits you derive from this association?
    ……
    ……
14. Is your shop registered? [ ] Yes [ ] No

15. If yes, which organization are you registered with?

……

16. Do you pay taxes? [ ] Yes [ ] No
17. If yes, how much do you pay?
18. If no, why?

B. Other Health and Safety Issues

19. Do you have break periods for lunch? [ ] Yes [ ] No
20. If yes, how many hours do you observe?

[ ] Below 15 mins [ ] Between 15 and 30 mins [ ] Between 30 and 45 mins.
[]Between 45 and 1 hour

21. Where do you have your lunch? ……
22. Do you wash your hands before eating? [ ] Yes [ ] No
23. Do you observe public holidays? [ ]Yes [ ] No
24. Which institutions visit your premises and for what reasons do they come there

INSTITUTION	REASONS FOR VISIT

25. Do you have access to water? [ ] Yes [ ] No
26. How do you dispose off your waste a. Water ? [ ] Open surface [ ] drainage

b. Refuse? [ ] drainage [ ] dump sites

27. What is the relationship between you and your employees?

[ ] Very Good [ ] Good [ ] Fair [ ] Poor

28. How do you rate your work environment?
29. [ ] Very Good [ ] Good [ ] Fair [ ] Poor

C. Cost of Occupational Injuries and Diseases

30. How often do you experience accidents at your workplace?

……
……

31. What type of accidents do you workers usually experience?

……
……

32. How many accidents occurred in your workplace last year?

[ ] 1-4 [ ] 5-9 [ ] 10-14 [ ] 15-19 [ ] 20-24 [ ] 25 and above

33. Who bears the cost of rehabilitation of injured workers?

[ ] Employee [ ] Employer [ ] Government [ ] Others *(Please specify)* ……

34. Please fill the table below

Injury	**Medical Costs**	**Number of days lost**	**Effects of Accident**	
			Death	**Damage specify cost of damage**

D. Workplace Safety Policies

35. Do you have any rules and regulations pertaining to your workplace? [ ] Yes [ ] No
36. If yes, what are they?

……..

37. In case of an accident, do you have any emergency response strategies? [ ] Yes [ ]No
38. If yes, how often are they educated on the strategies?

……
……

39. If No, why?

……
……

40. Do you have health insurance for your staff? [ ] Yes [ ] No
41. Which of the following safety equipment do you have at your workplace?

[ ] Fire Extinguisher [ ] First Aid Box [ ] Wet Blanket [ ] Shower [ ] Others

42. Which of the following Personal Protective Equipment do you have at your workplace?

[ ] Goggles [ ] Nose mask [ ] Gloves [ ] Safety Boots
[ ] Ear Protectors [ ] Machine Guards [ ] Safety over coat [ ]Others *(Please specify)*……

43. Who provides these Personal Protective Equipments?

[ ] Employer [ ] Employee [ ] Others (Please specify) ……..

44. How do you ensure the use of these protective equipments?

……
……

45. Are the employers comfortable using these equipment? [ ] Yes [ ] No
46. Do they use the Personal Protective Equipment? [ ] Yes [ ] No
47. Are workers trained on the use of the Personal Protective Equipment? [ ] Yes [ ] No
48. In case a worker is injured, do you replace him/her with another person? [ ] Yes [ ] No

49. How long do you take to train somebody to replace an injured person?
50. What are some of the problems you face as far you occupation is concern?

……
……

51. How do you think the problem can be solved?

……
……

E. Occupational Health Hazards

52. Please fill accordingly

Common Hazardous Substances in the Hairdressing Industry		
Product	**Ingredients**	**Health Risk**
Shampoo		
Neutralizers		
Conditioners		
Peroxide solutions, emulsions and creams		
Styling gels and Setting Lotion		
Hair Sprays and Mouses		
Relaxer		
Rubber Gloves		
Nail Polish Remover		

53. Where do you buy your products?

……

54. Do you read the labels before using? [ ] Yes [ ] No
55. What is the way forward for the development of your occupation?

SECTION III: QUESTIONNAIRE FOR EMPLOYEES (MECHANICS).

D. Background Data

23. Age:
24. Sex: [ ] Male [ ] Female
25. Marital Status [ ] Married [ ] Single [ ] Divorced [ ] Widowed
26. Educational level
[ ] Illiterate [ ] Primary [ ] JHS [ ] SHS [ ] Technical [ ] Vocational
27. Are you the breadwinner of your family? [ ] Yes [ ] No
28. If yes, how many dependents do you have? [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] Others specify …….
29. How many of them are of school going age? [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] Others specify ……
30. How many are aged (60 years and above)? [ ] 1 [ ] 2 [ ] 3 [ ] Others specify ……..
31. Employment Status
[ ] Full Time [ ] Part time [ ] Temporary [ ] Casual
32. Number of work hours per day
[ ] 4 hours [ ] 6 hours [ ] 8 hours [ ] 12 hours
33. Earnings: [ ] Daily [ ] Weekly [ ] Monthly
34. How much do you earn a month? ……..

35. Number of years of employment
……

E. Health and Safety Risks

36. Do you have break periods for lunch? [ ]Yes [ ] No
37. If yes, how many hours do you observe?
[ ] Below 15 mins [ ] Between 15 and 30 mins [ ]Between 30 and 45 mins.
[]Between 45 and 1 hour
38. Where do you have your lunch?
……
39. Do you wash your hands before eating? [ ] Yes [ ] No
40. Do you observe public holidays? [ ]Yes [ ] No
41. What kind of health hazard are you exposed to?
42. How many hours of sleep do you observe daily? ……

c. Physical Hazards

Noise: 16. Are you exposed to noise? [ ] Yes [ ] No
17. If yes, what is the source of the noise? [ ] Machines [ ] Vehicles [ ] Others (please specify)…….
18. Is the noise at your workplace [ ] Very loud [ ] Loud [ ] Moderate [ ] Low
19. How many hours are you exposed to this type of noise? …….
20. Does the noise affect your hearing? [ ] Yes [ ] No

Vibration: 21. Do you use drilling machines? [ ] Yes [ ] No

57. How long do you stay on the machine in the day? ……..
58. Do you have off days in a week or month? …….

d. Chemical Hazards

59. What type of chemicals do you use?
……
……..

60. How poisonous are the chemicals you work with? *(Ranking based on WHO's standard)*
[ ] Highly Poisonous [ ] Moderately Poisonous [ ] Slightly Poisonous
[ ] Unlikely Poisonous

61. Do you read labels on chemicals before use? [ ] Yes [ ] No

62. Are you exposed to i. burns [ ] Yes [ ] No
ii. Fumes inhalation? [ ] Yes [ ] No
iii. Smoke? [ ] Yes [ ] No
iv. Dust? [ ] Yes [ ]No
v. Fire? [ ] Yes [ ]No

c. Ergonomic Hazards

63. What is your usual posture at work?
[ ] Standing [ ] Bending [ ] Sitting [ ] Squatting

64. Is your posture comfortable? [ ] Yes [ ] No

65. Does your posture cause any pain in the body? [ ] Yes [ ] No

66. If yes which part of your body is affected?
……
……

67. Which of the following safety equipment do you have at your workplace?
[ ] Fire Extinguisher [ ] First Aid Box [ ] Wet Blanket [ ] Shower [ ] Others

68. Which of the following Personal Protective Equipment do you have at your workplace?
[ ] Goggles [ ] Nose mask [ ] Gloves [ ] Safety Boots [ ] Ear Protectors [ ] Machine Guards [ ] Safety over coat [ ] Masks [ ] Others (Please specify)

69. Who provides the Personal Protective Equipment?
[ ] Employer [ ] Self [ ] Government [ ] Others *(Please specify)*

70. Are you trained on the use of the Personal Protective Equipment? [ ] Yes [ ] No

71. Do you think the protective devices are enough? [ ] Yes [ ] No

72. Are the protective devices comfortable? [ ] Yes [ ] No

73. Do you use the Personal Protective Equipment?

e. Psycho Social Hazards

74. Are you satisfied with your work? [ ] Yes [ ] No

75. If No, why?.....

76. How safe is your work environment? [ ] Very safe [ ] Safe [ ] Unsafe

77. What is the relationship between you and your employer?
[ ] Very Good [ ] Good [ ] Fair [ ] Poor
78. Whom do you report occupational injuries to?
[ ] Supervisor [ ] Employer [ ] Nobody [ ] Others (Please specify) …….....

F. Cost of Occupational Injuries and Diseases

79. Have you been involved in any accident in the past year? [ ] Yes [ ] No
80. How many times were you involved in an accident last year? [ ] 1 [ ] 2
[ ] 3 [ ] 4 [ ]5 [ ] More than 5
81. Did you sustain any injuries as a result of the accidents? [ ] Yes [ ]No
82. If yes, what type of injury did you sustain?
…… ……
83. Have you fallen sick as a result of your workplace hazard? [ ] Yes [ ] No
84. Did the disease or sickness keep you away from work? [ ]Yes [ ] No
85. If yes, how long did you stay away from work?
[ ] below 1 month [ ] between 2 and 3months [ ] between 3 and 4 months
[ ] between 4 and 5months [ ] between 5 and 6 months [ ] above 6 months [ ] Others *(Please specify)*…….
86. What type of disease were you affected with? ……
87. What was the medical cost of the injury and disease?
[ ] Below GH₵ 20 [ ] Between GH₵20 and GH₵40 [ ] Between GH₵40 and GH₵60 [ ] Between GH₵60 and 80 [ ] Between GH₵80 and GH₵100 [ ] Above GH₵100
88. Are you registered under the National Health Insurance Scheme? [ ] Yes [ ]No
89. If No, why? [ ] It is expensive [ ] Long queues at the hospitals
[ ] Low coverage for drugs [ ] Others (Please Specify)…….
90. Who paid the medical bills?
[ ] Self [ ] Employer [ ] Both [ ] Health Insurance
91. Were you compensated when you got injured? [ ] Yes [ ]No
92. If yes, in what form did the compensation take?
[ ] Cash [ ] Sick leave [ ] Others (specify)……

93. Please complete the table below

Date	**Injury**	**Medical Costs**	**Transportation/ Nonmedical Costs**

SECTION IV: QUESTIONNAIRE FOR EMPLOYERS (MECHANICS)

F. BACKGROUND INFORMATION

56. Age…….
57. Sex [ ] Male [ ] Female
58. Educational Level
    [ ] Illiterate [ ] Primary [ ] JHS [ ] SHS [ ] Technical [ ] Vocational
59. Number of employees ……
60. Proportion of employees who are: a. Men ……
    b. Women ……
    c. Disabled ……
61. Number of work hours per day: [ ] 4 hours [ ] 6 hours [ ] 8 hours [ ] 12 hours
62. How did you acquire the land on which you operate? ……..
63. If you pay rent, how much do you pay every month? ……
64. Earnings: [ ] Daily [ ] Weekly [ ] Monthly
65. How much do you earn a month? ……..
66. Number of years of employment …… ……
67. Do you belong to any association? [ ] Yes [ ] No
68. What are the roles/benefits you derive from this association?
    ……
    ……
69. Is your shop registered? [ ] Yes [ ] No
70. If yes, which organization are you registered with?
    ……
    .
71. Do you pay taxes? [ ] Yes [ ] No
72. If yes, how much do you pay?
73. If no, why?……

G. Other Health and Safety Issues

74. Do you have break periods for lunch? [ ] Yes [ ] No
75. If yes, how many hours do you observe?
    [ ] Below 15 mins [ ] Between 15 and 30 mins [ ] Between 30 and 45 mins.
    []Between 45 and 1 hour
76. Where do you have your lunch? …….
77. Do you wash your hands before eating? [ ] Yes [ ] No
78. Do you observe public holidays? [ ]Yes [ ] No
79. How safe is your work environment? [ ] Very safe [ ] Safe [ ] Unsafe
80. What is the relationship between you and your employer?

[ ] Very Good [ ] Good [ ] Fair [ ] Poor

81. Which institutions visit your premises and for what reasons do they come there

INSTITUTION	REASONS FOR VISIT

H. Cost of Occupational Injuries and Diseases

82. How often do you experience accidents at your workplace?

……
……

83. What type of accidents do you workers usually experience?

……
……
.

84. How many accidents occurred in your workplace last year?

[ ] 1-4 [ ] 5-9 [ ] 10-14 [ ] 15-19 [ ] 20-24 [ ] 25 and above

85. Who bears the cost of rehabilitation of injured workers?

[ ] Employee [ ] Employer [ ] Government [ ] Others *(Please specify)* ……

86. Please fill the table below

Injury	Medical Costs	Number of days lost	Effects of Accident	
			Death	Damage specify cost of damage

I. Workplace Safety Policies

87. Do you have any rules and regulations pertaining to your workplace? [ ] Yes [ ] No

88. If yes, what are they?

……..

89. In case of an accident, do you have any emergency response strategies? [ ] Yes [ ]No

90. If yes, how often are they educated on the strategies?

……
……
……

91. If No, why?

……
……

92. Do you have health insurance for your staff? [ ] Yes [ ] No
93. Which of the following safety equipment do you have at your workplace?
[ ] Fire Extinguisher [ ] First Aid Box [ ] Wet Blanket [ ] Shower [ ] Others

94. Which of the following Personal Protective Equipment do you have at your workplace?
[ ] Goggles [ ] Nose mask [ ] Gloves [ ] Safety Boots
[ ] Ear Protectors [ ] Machine Guards [ ] Safety over coat [ ]Others *(Please specify)*……

95. Who provides these Personal Protective Equipments?
[ ] Employer [ ] Employee [ ] Others (Please specify) ……
96. How do you ensure the use of these protective equipments?

……
……

97. Are the employers comfortable using these equipment? [ ] Yes [ ] No
98. Do they use the Personal Protective Equipment? [ ] Yes [ ] No
99. Are workers trained on the use of the Personal Protective Equipment? [ ] Yes [ ] No
100. In case a worker is injured, do you replace him/her with another person? [ ] Yes [ ] No
101. How long do you take to train somebody to replace an injured person?
102. What are some of the problems you face as far you occupation is concern?

……
……

103. How do you think the problem can be solved?

……
……

104. What is the way forward for the development of your occupation?

SECTION V: QUESTIONNAIRE FOR EMPLOYEES (DRIVERS)

G. Background Data

43. Age:

44. Sex: [ ] Male [ ] Female
45. Marital Status [ ] Married [ ] Single [ ] Divorced [ ] Widowed
46. Educational level
[ ] Illiterate [ ] Primary [ ] JHS [ ] SHS [ ] Technical [ ] Vocational
47. Are you the breadwinner of your family? [ ] Yes [ ] No
48. If yes, how many dependents do you have? [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] Others specify …….
49. How many of them are of school going age? [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] Others specify …….
50. How many are aged (60 years and above)? [ ] 1 [ ] 2 [ ] 3 [ ] Others specify ……..
51. Work experience (Current work)
52. Employment Status
[ ] Full Time [ ] Part time [ ] Temporary [ ] Casual
53. Number of work hours per day
[ ] 4 hours [ ] 6 hours [ ] 8 hours [ ] 12 hours
54. Earnings: [ ] Daily [ ] Weekly [ ] Monthly
55. How much do you earn a month? ……..

56. Number of years of employment ……

H. Health and Safety Risks

57. Do you have break periods for lunch? [ ]Yes [ ] No
58. If yes, how many hours do you observe?
[ ] Below 15 mins [ ] Between 15 and 30 mins [ ]Between 30 and 45 mins.
[]Between 45 and 1 hour
59. Where do you have your lunch? ……
60. Do you wash your hands before eating? [ ] Yes [ ] No
61. Do you observe public holidays? [ ]Yes [ ] No
62. What kind of health hazard are you exposed to?.....
63. How many hours of sleep do you observe daily? ……

f. Physical Hazards

Noise: 16. Are you exposed to noise? [ ] Yes [ ] No
21. If yes, what is the source of the noise? [ ] Machines [ ] Vehicles [ ] Others (please specify)…….
22. Is the noise at your workplace [ ] Very loud [ ] Loud [ ] Moderate [ ] Low
23. How many hours are you exposed to this type of noise? …….
24. Does the noise affect your hearing? [ ] Yes [ ] No

g. Chemical Hazards

94. Are you exposed to i. burns [ ] Yes [ ] No
ii. Fumes inhalation? [ ] Yes [ ] No

iii. Smoke? [ ] Yes [ ] No
iv. Dust? [ ] Yes [ ]No
v. Fire? [ ] Yes [ ]No

c. Ergonomic Hazards

95. What is your usual posture at work?
[ ] Standing [ ] Bending [ ] Sitting [ ] Squatting [ ] Others (Specify)……...
96. Is your posture comfortable? [ ] Yes [ ] No
97. Does your posture cause any pain in the body? [ ] Yes [ ] No
98. If yes which part of your body is affected?
……
……
99. Which of the following safety equipment do you have at your workplace?
[ ] Fire Extinguisher [ ]First Aid Box [ ] Wet Blanket [ ] Shower [ ] Others
100. Do you have a driver's license? [ ] Yes [ ] No
101. Do you have seatbelts in your vehicle? [ ]Yes [ ] No
102. Do you wear your seat belt? [ ] Yes [ ] No
103. Are you comfortable with the use of the seat belt? [ ] Yes [ ] No
104. What is your highest driving speed? …….
105. Do you drink alcohol?[ ] Yes [ ] No
106. Have you ever driven under the influence of alcohol? [ ] Yes [ ] No
107. If yes, what was the effect?
……
108. How many trips do you make in a day?
……..
109. How often do you maintain your vehicle? ……

d. Psycho Social Hazards

110. Are you satisfied with your work? [ ] Yes [ ] No
111. If No, why?.....
112. How safe is your work environment? [ ] Very safe [ ] Safe [ ] Unsafe
113. What is the relationship between you and your employer?
[ ] Very Good [ ] Good [ ] Fair [ ] Poor
114. Whom do you report occupational injuries to?
[ ] Police [ ] Supervisor [ ] Employer [ ] Nobody [ ] Others (Please specify) …….....

I. Cost of Occupational Injuries and Diseases

115. Have you been involved in any accident in the past year? [ ] Yes [ ] No
116. How many times were you involved in an accident last year? [ ] 1 [ ] 2
[ ] 3 [ ] 4 [ ]5 [ ] More than 5

117. Did you sustain any injuries as a result of the accidents? [ ] Yes [ ]No

118. If yes, what type of injury did you sustain?

……

……

119. Have you fallen sick as a result of your workplace hazard? [ ] Yes [ ] No

120. Did the disease or sickness keep you away from work? [ ]Yes [ ] No

121. If yes, how long did you stay away from work?

[ ] 1 week [ ] 2 weeks [ ] 1 month [ ] 2 months [ ] 3 months [ ] 4 months [ ] 5 months [ ] 6 months [ ] Above 6 months [ ] Others *(Please specify)*……

122. What type of disease were you affected with?

……

123. What was the medical cost of the injury and disease?

[ ] Below GH₵ 20 [ ] Between GH₵20 and GH₵40 [ ] Between GH₵40 and GH₵60 [ ] Between GH₵60 and 80 [ ] Between GH₵80 and GH₵100 [ ] Above GH₵100

124. Are you registered under the National Health Insurance Scheme? [ ] Yes [ ]No

125. If No, why? [ ] It is expensive [ ] Long queues at the hospitals [ ] Low coverage for drugs [ ] Others (Please Specify)…….

126. Who paid the medical bills?

[ ] Self [ ] Employer [ ] Both [ ] Health Insurance

127. Were you compensated when you got injured? [ ] Yes [ ]No

128. If yes, in what form did the compensation take?

[ ] Cash [ ] Sick leave [ ] Others (specify)……

129. Please complete the table below

Date	**Injury**	**Medical Costs**	**Transportation/ Nonmedical Costs**

SECTION VI: QUESTIONNAIRE FOR HEAD PORTERS (KAYAYE)

A. Background Data

64. Age:

65. Sex: [ ] Male [ ] Female
66. Marital Status [ ] Married [ ] Single [ ] Divorced [ ] Widowed
67. Educational level
[ ] Illiterate [ ] Primary [ ] JHS [ ] SHS [ ] Technical [ ] Vocational
68. Are you the breadwinner of your family? [ ] Yes [ ] No
69. If yes, how many dependents do you have? [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] Others specify …….
70. How many of them are of school going age? [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] Others specify …….
71. How many are aged (60 years and above)? [ ] 1 [ ] 2 [ ] 3 [ ] Others specify ……
72. Number of years of employment
……
73. Employment Status
[ ] Full Time [ ] Part time [ ] Temporary [ ] Casual
74. Number of work hours per day
[ ] 4 hours [ ] 6 hours [ ] 8 hours [ ] 12 hours
75. Earnings: [ ] Daily [ ] Weekly [ ] Monthly
76. How much do you earn a month? ……..

A. Health and Safety Risks

77. Do you have break periods for lunch? [ ]Yes [ ] No
78. If yes, how many hours do you observe?
[ ] Below 15 mins [ ] Between 15 and 30 mins [ ]Between 30 and 45 mins.
[]Between 45 and 1 hour
79. Where do you have your lunch?
……
80. Do you wash your hands before eating? [ ] Yes [ ] No
81. Do you observe public holidays? [ ]Yes [ ] No
82. What kind of health hazards are you exposed to?
……

h. Physical Hazards

Noise: 16. Are you exposed to noise? [ ] Yes [ ] No
25. If yes, what is the source of the noise? [ ] Machines [ ] Vehicles [ ] Others (please specify)…….
26. Is the noise at your workplace [ ] Very loud [ ] Loud [ ] Moderate [ ] Low
27. How many hours are you exposed to this type of noise? …….
28. Does the noise affect your hearing? [ ] Yes [ ] No

i. Ergonomic Hazards

130. What is your usual posture at work?
[ ] Standing [ ] Bending [ ] Sitting [ ] Squatting [ ] Carrying

131. Is your posture comfortable? [ ] Yes [ ] No
132. Does your posture cause any pain in the body? [ ] Yes [ ] No
133. If yes which part of your body is affected?

……

j. Psycho Social Hazards

134. Are you satisfied with your work? [ ] Yes [ ] No
135. If No, why?.....
136. How safe is your work environment? [ ] Very safe [ ] Safe [ ] Unsafe
137. Where do you live? ……
138. Whom do you report occupational injuries and diseases to?
[ ] Supervisor] Employer [ ] Nobody [ ] Others (specify) …….....
139. Have you ever been sexually harassed? [ ] Yes [ ] No

B. Cost of Occupational Injuries And Diseases

140. Have you been involved in any accident in the past year? [ ] Yes [ ] No
141. How many times were you involved in an accident last year? [ ] 1 [ ] 2
[ ] 3 [ ] 4 [ ]5 [ ] More than 5
142. Did you sustain any injuries as a result of the accidents? [ ] Yes [ ]No
143. If yes, what type of injury did you sustain?

……

……

144. Have you fallen sick as a result of your workplace hazard? [ ] Yes [ ] No
145. Did the disease or sickness keep you away from work? [ ]Yes [ ] No
146. If yes, how long did you stay away from work?
[ ] below 1 month [ ] between 2 and 3months [ ] between 3 and 4 months
[ ] between 4 and 5months [ ] between 5 and 6 months [ ] above 6 months [ ]
Others *(Please specify)*…….
147. What type of disease were you affected with? ……
148. What was the medical cost of the injury and disease?
[ ] Below GH₵ 20 [ ] Between GH₵20 and GH₵40 [ ] Between GH₵40 and GH₵60 [ ] Between GH₵60 and 80 [ ] Between GH₵80 and GH₵100 [ ] Above GH₵100
149. Are you registered under the National Health Insurance Scheme? [ ] Yes [ ]No
150. If No, why? [ ] It is expensive [ ] Long queues at the hospitals
[ ] Low coverage for drugs [ ] Others (Please Specify)…….
151. Who paid the medical bills?
[ ] Self [ ] Employer [ ] Both [ ] Health Insurance
152. Were you compensated when you got injured? [ ] Yes [ ]No
153. If yes, in what form did the compensation take?
[ ] Cash [ ] Sick leave [ ] Others (specify)……

154. Please complete the table below

Date	Injury	Medical Costs	Transportation/ Nonmedical Costs

155. Do you belong to association? [ ] Yes [ ] No

156. If yes what is the name of the association?

……..

157. What benefits do you derive from this association?

……

SECTION VII: INTERVIEW GUDIE FOR MUNICIPAL/NATIONAL FACTORIES INSPECTORATE/LABOUR DEPARTMENT

Name of Department:……

1. What is your mandate as a department?
2. Do you have any legislation you work with?
3. How do you ensure enforcement of legislations?
4. How does your organization prevent Occupational Health hazards in the informal service sector?
5. Is there any OHS policy for informal workers in Ghana?
6. How often do you go on inspection?
7. Do you have adequate staff and logistics to perform your duties?

Logistics	Available	Required	Backlog/Surplus

8. Are your staff adequately trained to perform their tasks?
9. What type of training is needed by your staff?
10. What is your annual budget for ensuring health and safety

11. What percentage of the budget goes to the informal sector and the informal service sector?
12. Apart from government subvention, does your department receive funds from donors?
13. Does your department collaborate with other departments?
14. What procedures are to be followed in reporting occupational accidents, injuries and diseases to your outfit?
15. Please fill this for the accidents recorded in the informal service sector

YEAR	SECTOR		ACCIDENTS		TOTAL
	FORMAL	INFORMAL	NON-FATAL	FATAL	
2005					
2006					
2007					
2008					
2009					
2010					

16. How do you ensure the effective implementation of the Workmens Compensation Act
17. What are some of the challenges and constraints facing the department
18. What is the way forward in maintaining health and safety in the informal service sector?
19. What is the current minimum wage?
20. Is the minimum wage for informal workers different from that of the formal workers?
21. What do you do to employers who pay their employees below the minimum wage?
22. Do you have adequate staff and logistics to ensure the implementation of your policies?
23. What are some of the challenges and constraints facing the department
24. What is the way forward in maintaining health and safety in the informal service sector?

SECTION VIII: INTERVIEW GUDIE FOR KEY INFORMANTS

Name of Department:……

1. What is your department's mandate concerning OHS?
2. How does your organization ensure health and safety in the informal service sector?
3. Is there any OHS policy for informal workers in Ghana?
4. What does the policy state?
5. What is your annual budget for ensuring health and safety in Ghana?

6. What percentage of the budget goes for the informal service sector?
7. Apart from government subvention, does your department receive funds from donors?
8. Does your department collaborate with other departments?
9. What procedures are to be followed in reporting occupational accidents, injuries and diseases?
10. What are some of the challenges and constraints of ensuring health and safety
11. What is the way forward in maintaining health and safety in the informal service sector?