# Impact of Safety and Health Audits on the working conditions in Nairobi Metropolis

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**A Thesis submitted in partial fulfilment for the degree of Master of Science in Occupational Safety and Health in the Jomo Kenyatta University of Agriculture and Technology**

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## DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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## DEDICATION

This work is dedicated to all Kenyan workers who have contributed significantly to the growth of the country's economy.

## ACKNOWLEDGEMENT

I wish to sincerely thank the Almighty God for making it possible for me to pursue this course. He has given me good health, finances and stamina to come this far.

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| | |
|---|---|
| **DOSHS** | Directorate of Occupational Safety and Health Services |
| **HSA** | Health and Safety Authority |
| **HSE** | Health and Safety Executive |
| **ILO** | International Labour Organization |
| **NEMA** | National Environment Management Authority |
| **OSH** | Occupational Safety and Health |
| **OSHA** | Occupational Safety and Health Authority |
| **USA** | United States of America |

## ABSTRACT

Safety and health auditing is a structured process of collecting independent information on the efficiency, effectiveness and reliability of the safety and health management system of an organization and drawing up plans for corrective action.

The aim of this study was to evaluate the impact of safety and health audits on improvement of working conditions in workplaces within Nairobi Metropolis since introduction of safety and health audits in Kenya in 2004.

Ten (10) workplaces, one management representative from each of the workplaces and a total of one hundred and thirty (130) workers were selected for this study. A Safety and Health audit database at DOSHS, workplace audit reports and questionnaires were used for the study.

The study found that the number of workplaces that were audited from 2005 to 2008 increased from 315 in 2005 to 632 in 2008 marking an increase of 100.6%. However, only 6.35% of the workplaces consistently underwent auditing from 2005 to 2008 annually. Implementation of the recommendations contained in the safety and health audit reports by the workplaces averaged 65%, the major impediments to implementation being lack of adequate budgetary allocation to safety and health in the workplaces and follow up by DOSHS. Employers' commitment to safety and health was found to be marginal. Overall, there has been improvement of the working conditions within Nairobi Metropolis since the introduction of safety and health audits in 2004.

The researcher recommends introduction of control audits and an action plan with a time schedule to expedite implementation of recommendations in the audit reports. A further study to determine the reason for marginal commitment towards safety and health by employers in Kenya and the extent to which Safety and Health Advisers have contributed towards promotion of a safety and health culture in Kenya is also recommended.

# CHAPTER ONE

## 1.0 INTRODUCTION

### 1.1 Background

In 1990, the Factories and Other Places of Work Act, Cap. 514, Laws of Kenya introduced a requirement in the law that factories which regularly employ at least twenty employees should have a Safety and Health committee on which the employer and the workers are represented. It further stated that the minister responsible for labour matters may, by rules, prescribe the organization, functions and activities of safety and health committees. The rules were made in 2004 vide legal notice number 31 of the same year and were titled Factories and other Places of Work (Safety and Health Committee) rules, 2004 (LN 31/2004).

Clause 13 (1) of the rules provides that the occupier of every workplace shall cause a safety and health audit of the workplace to be carried out at least once in every period of twelve months by a registered safety and health adviser at such fee as may be agreed upon with such adviser. The adviser is required to make a report which should be kept by the occupier and a copy sent to the director of occupational safety and services within a period of thirty days following the audit (Rule 11.(1) c). The rules also place a duty on the adviser to advise both the occupier and the workplace safety and health committee on matters arising from the audit (Rule 11(1) b).

The Factories and Other Places of Work Act, Cap. 514 was repealed in 2007 and was replaced by Occupational safety and Health Act. The new Act extended the

requirement for auditing to all workplaces regardless of the number of persons employed (Section 11).

The safety and health advisers are professionals in the area of occupational safety and health and are approved by the Director of Occupational Safety and Health Services to carry out the audits. The department of Occupational Safety and Health Services which is the government department responsible for occupational safety and health in Kenya issued a code of practice on occupational safety and health auditing which was intended to provide guidelines for use by the advisers, employers and anybody else with a responsibility for safety and health in Kenya.

The audit reports submitted to DOSHS are scrutinized by the officers in the department with a view to enforcing implementation of the recommendations contained therein.

Prior to introduction of safety and health audits in Kenya, inspection of workplaces by occupational safety and health officers, who are government employees, was the only means available for ensuring that the working conditions in Kenyan workplaces were safe and healthy.

Inspection entails visiting a workplace to check on the working conditions, records and documents which the employer is obliged to keep by the law. Such matters as storage facilities, housekeeping, state of machinery, plant and equipment, processes being employed in the workplace, ventilation, lighting, welfare facilities including provision of personal protective equipment to the employees etc. are checked to see whether they are available in the workplace and in the condition that the law

requires. In the event that the conditions do not conform to the requirements of the law, the inspecting officer is empowered to issue an improvement notice requiring that the conditions be improved within a specific period of time. Prohibition notice can be issued by the officer if he/she is of the opinion that the working conditions is such that it may involve risk of serious personal injury. A prohibition notice directs the employer to stop carrying out any activity giving rise to such conditions. The officer is also empowered to prosecute an employer or employee found to have contravened a provision of the law.

DOSHS has placed more emphasis on the audits, as a policy, to fulfil its key mandate of ensuring that working conditions in Kenyan workplaces are safe and healthy.

## 1.2 Problem Statement.

Safety and health audits is assumed to be a more effective tool for improvement of working conditions in Kenyan workplaces than inspections hence the introduction of mandatory safety and health audits. However, no study had been undertaken to evaluate the impact the audits had towards achieving safe and healthy working conditions in Kenya.

## 1.3 Objectives

### 1.3.1 General objective.

The general objective of this study was to determine the impact of safety and health audits on improvement of working conditions in workplaces within Nairobi Metropolis.

### 1.3.2 Specific Objectives.

i. To enumerate workplaces that have been audited from 2005 to 2008 in Kenya and determine the percentage of the workplaces that have been audited consistently since 2005.

ii. To analyze the recorded accidents and cases of ill health for years 2005, 2006, 2007 and 2008 and establish the trend.

iii. To find out perception of the workers on the working conditions in their places of work, where audits have been carried out.

iv. To verify level of implementation of the recommendations made in the audit reports by safety and health advisers.

v. To determine factors affecting implementation of recommendations contained in audit reports.

## 1.4 Hypotheses

$H_O$ (Null hypothesis): There has been no improvement of the working conditions within Nairobi Metropolis since the introduction of safety and health audits.

$H_1$ (Alternate Hypothesis): There has been improvement of the working conditions within Nairobi Metropolis since the introduction of safety and health audits.

## 1.5 Research Questions

The researcher aimed to answer the following questions in an attempt to determine the impact of safety and health audits in Kenyan workplaces. The questions have a direct bearing on safe and healthy working conditions in a workplace.

a) Have workplaces been audited consistently since introduction of the audits in 2005?

b) What is the trend of occupational accidents and ill health /occupational diseases since introduction of safety and health audits?

c) What is the perception of workers on the working conditions in their places of work?

d) What is the level of implementation of the recommendations contained in the audit reports?

e) What are the factors that affect the implementation of recommendations contained in the audit reports?

### 1.6 Justification

This study was carried out with a view to determining how effective safety and health audits were in the improvement of working conditions in Kenya.

The findings of this study are expected to help the department of Occupational Safety and Health Services (DOSHS), to evaluate the auditing system and make the necessary improvements with a view to improving the working conditions in Kenya.

### 1.7 Conceptual Framework.

The conceptual framework of the study is summarised in Figure 1.1.

When OSH audits are carried out regularly, there should be a reduction in accidents, ill-health and increase of workers' morale which in turn should lead to increased

productivity and less insurance premiums with resultant increase in profits. An OSH audit should identify hazards and make recommendations on mitigation measures which if implemented fully should lead to an improvement in the working conditions.

This study was limited to relationship between OSH audits and improvement of working conditions which can be determined by a decline in the number of accidents and cases of ill-health in a workplace.

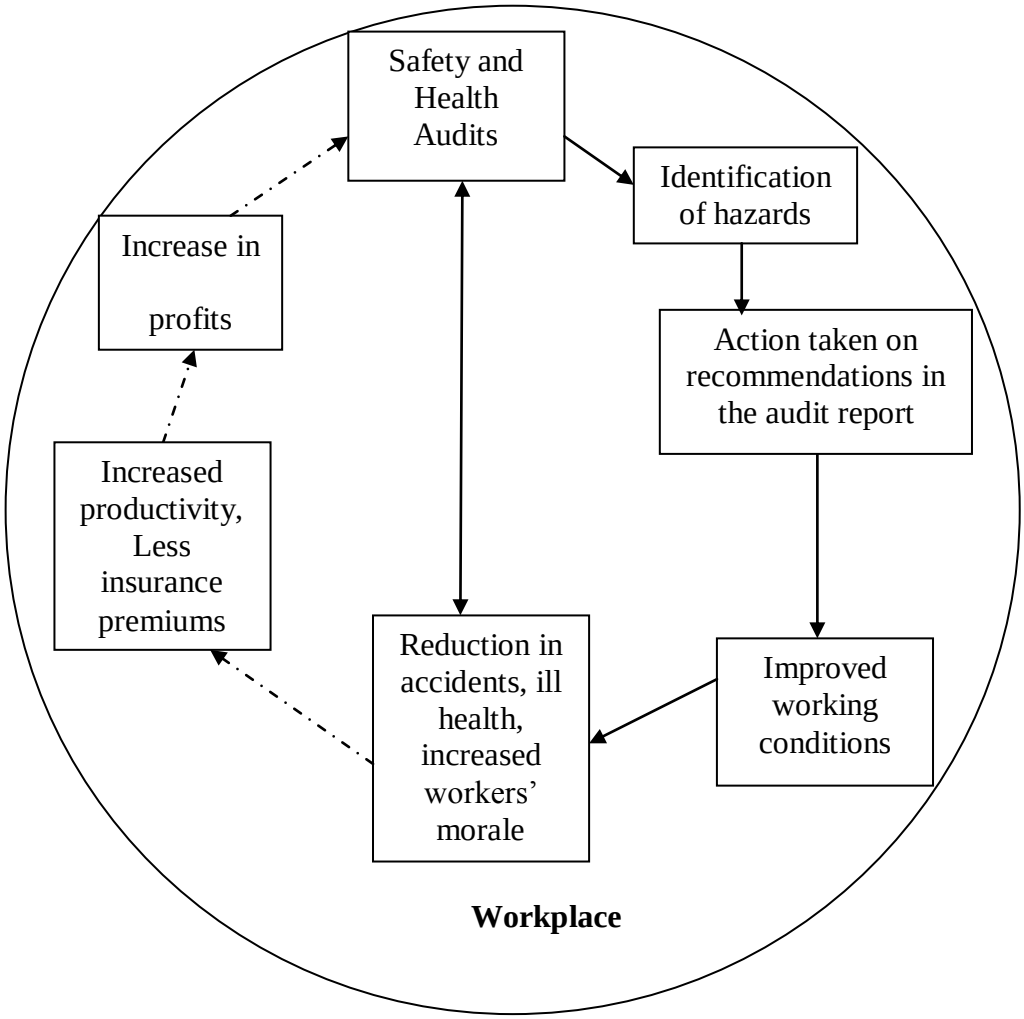


**Figure 1.1 Conceptual framework.**

# CHAPTER TWO

## 2.0 LITERATURE REVIEW

### 2.1 Introduction

Fuller and Vassie (2004) state that risk is the chance of a particular situation or event having an impact upon an individual's, organization's or society's objectives within a stated period of time. They point out that risk occurs from a variety of sources and the source of risk can be used to categorize risks. Such categories include environmental risks such as global warming and air pollution, financial risks such as currency exchange rates and share values, health risks such as blood pressure and malaria, recreational risks such as mountaineering and swimming, occupational health and safety risks such as manual handling, noise and dust. According to Dorman (2000), there are two major principles that influence management of occupational health and safety risks; the absolute right of individuals not to suffer injury and ill-health and the importance of equity in the way that costs and benefits are distributed among the population. He argues that if the goal of the firms is to maximize profits, the goal of the public health community is to minimize morbidity and mortality and this principle is observed in the field of medicine where doctors do not ask whether the patient's health is worth the cost. If there is a remedy it must be taken. Therefore, those who share in the profits of a firm, whether as owners or managers, should not do so at the expense of preventable risks to the workforce.

Dorman (2000) adds that the public is justified to expect that means to protect both the public and workers from high levels of risk must continually be looked for by governments and individual organizations to ensure safe and healthy workplaces.

Rantanen (2004) reinforces this argument and says that it needs to be understood that to ensure a safe and healthy workplace which is free from the risk of diseases and accidents, physical, chemical and biological exposure and ergonomic problems is not a burden but a resource for all enterprises, societies, countries and the working people.

A healthy and safe state refers to a state where unacceptable risks which can cause harm to people do not exist (Fuller and Vassie, 2004). Such harm includes accidents, diseases, ill health and damage to property. The National Safety Council (1985) points out that occupational accidents, diseases, ill health and damage to property which can and do arise as a result of lack or inadequate safe and healthy working conditions do impact negatively to the overall goal of an enterprise of producing goods and services at a minimum cost.

Safety and health audits as indicated by Pomfret (2008) provide management of enterprises with answers based on facts and help generate appropriate solutions to problems of safety and health better than any other safety related activity in any industrial or commercial enterprise.

## 2.2 History of Occupational Safety and Health.

Thomas (1999) writes that king Hammurabi who belonged to the first dynasty of Babylonia set in motion, in 1760 BC, the collection of laws and edicts that came to be called the Hammurabi Code.

The code provided the procedures regarding the property rights, personal rights and debts. It provided for, among other things, damages caused by neglect in various trades. He placed a value on permanent injuries such as the loss for an eye for which the owner of a slave worker paid the worker or paid the doctor's bill. He continues to say that a variety of hazards were identified in the early and middle ages including the effects of lead and mercury exposure, burning of fires in confined spaces as well as the need for personal protective equipment.

Reese (2003) says that historically, Egyptians knew the dangers posed by gold and silver fumes and that they had a first aid manual for workers, as early as 3000BC. He cites as examples the case of English chimney cleaners who were found to be having a propensity to testicular cancer from the chimney soot in 1700s and the case of stone cutters whom Hippocrates, the father of medicine, associated with breathing problems in 400 BC. Reese (2003) adds that Beardini Ramazzin, an Italian physician regarded as the father of occupational medicine was the first person to suggest that doctors ask their patients about work when diagnosing illness, "What is your occupation?"

The industrial revolution in Europe which was brought about by the discovery of steam engine in the 18th century saw introduction of large scale mechanized

production with the factory as a production unit from what was hitherto a cottage industry (ILO, 1978). Reese (2003) notes that the concept of factory as a production unit resulted in atrocious working conditions which were brought about by cheap labour comprising mainly women and children. Overcrowding and speed of unguarded machinery caused physical injuries, illnesses and deaths to soar which inevitably brought about demands for reform to protect factory workers and especially women and children. According to Reese (2003), these demands were met with indignation by most of the factory owners who did not receive kindly suggestion that they should be held liable for any accidents that occurred on their premises.

One of the people calling for the reforms was Engel Dollfus who in 1865 made this expression:

> *"The employer owes more than wages to his workers. It is his duty to take care of their moral and physical condition, and this purely moral obligation, which cannot be replaced by any kind of wages, should take precedence over considerations of private interest"*
>
> (P. Caloni as cited in ILO publication 1978 p. 9-10.)

In 1867, Engel Dollfus went on to found an association for the prevention of factory accidents and for exchange of experience in safety problems between different undertakings. This gave a powerful stimulus to the introduction of suitable safety precautions in industry.

Since then and as cited by ILO (1978), Governments and socially enlightened employers have recognized that if industry is to develop in a safe, healthy and orderly manner, some control over working conditions in industry is essential.

**2.3 Legislation on health and safety in Kenya.**

The first law on safety and health, "The preservation of health and morals of apprentices and other people employed in mills and factories", was adopted in 1802 in the United Kingdom. In 1878, the Factories and Workshops Act, which introduced an official factory inspectorate was passed. This was replaced by the Factories Act in 1937 which was adapted by Kenya in 1951 as a colony of United Kingdom.

The Factories Act applied to all premises which fell within the legal meaning of a factory and included any premise where persons were employed and were engaged in manual labour in the making, repair, alteration, cleaning or adapting for sale of any article for purposes of gain was deemed to be a factory. The Act also applied to docks, warehouses, building operations and works of engineering construction and other premises in which steam boilers, hoists and lifts were used.

The law required that factories were kept in a clean state, were adequately ventilated, lighted, properly drained, had sufficient space in which to work and sanitary accommodation was both adequate and suitable.

It was also a requirement that every dangerous part of machinery should be securely fenced unless equally safe by position or construction. The Act also forbid any person to sell or hire out for use in a factory within Kenya any machine not conforming to standards of safeguarding stipulated in the law.

The Act required particular classes of plant found in factories like hoists and lifts, cranes, chains and other lifting gear, steam pressure plant (including steam boilers and receivers) and air receivers to be examined at regular intervals by persons authorized for that purpose by the Chief Inspector of Factories.

Other aspects covered by the Act were fencing of vessels containing dangerous liquids, training and supervision of inexperienced workers, safe means of access and safe place of employment, dangerous fumes, explosion risks and precautions against fire. The Act also provided for supply of drinking water, washing facilities, clothing accommodation and first aid. It was also a requirement under the law to remove dust or fumes, not to take meals in certain dangerous trades, to provide protective clothing and to protect eyes from risk of injury in certain processes.

Power to institute legal proceedings before magistrates' courts was vested on Factories Inspectorate by the Act to deal with employers who were reluctant to provide safe and healthy working conditions.

The Factories Act was amended in 1990 through the Factories (Amendment) Act of 1990 and changed its title to Factories and other places of work Act. The new law retained the provisions under the previous law but added new ones to reflect the changing technology and expansion of the Kenyan economy.

Among the changes was inclusion of the term "other places of work "to be able to cover workers who were not working in "factories" as defined by the previous Act and were therefore not protected by the law such as those working in the agricultural sector.

This amendment also made it a requirement that factories and other places of work which regularly employed at least twenty employees should have a Safety and Health committee on which the employer and the workers were represented. It also became mandatory for accidents and occupational diseases to be reported to the department within a specified period of time.

The name of the department responsible for enforcement of the law changed from Factories Inspectorate to Directorate of Occupational Health and Safety Services and the enforcement personnel adopted the titles of Occupational Health and Safety officers from Factories Inspectors. The officers were also given additional powers of issuing both improvement and prohibition notices.

The new law however did not take cognizance of the International Labour Organization (ILO) conventions on occupational safety and health and specifically convention 155 (Occupational Safety and Health Convention, 1981), convention 170 (Chemicals Convention, 1990) and convention 184 (Safety and Health in Agriculture Convention, 2001) and was subsequently repealed in 2007 and replaced by the Occupational Safety and Health Act of 2007.

The Occupational Safety and Health Act provide for safety, health and welfare of employed and self employed persons and all persons who may be lawfully present at workplaces. The Act also provides for the establishment of the National Council for Occupational Safety and Health (NACOSH) which is responsible for advising the minister for labour matters on formulation and development of safety and health policies in the country. The Act applies to all workplaces where any person is at work, whether temporarily or permanently.

The Act introduced new provisions among them a requirement that all workplaces and not just those employing twenty or more persons had to undergo safety and health audits annually.

All the subsidiary legislation made under the repealed Factories and other places of work Act remained in force. This included the Factories and other places of work (Health and safety committee) rules.

Under the Act, a "workplace" includes any land, premises, location, vessel or thing, at, in, upon, or near which, a worker is, in the course of employment.

## 2.4 Causes of accidents and ill health in workplaces

### 2.4.1 Accidents.

The Institution of Occupational Safety and Health (2006) defines an accident as an undesired event, which results in physical harm and/or property damage, usually resulting from contact with a source of energy above the ability of the body or structure to withstand. In Croner Health and Safety publications (1998) an accident is defined as any undesired circumstances which give rise to ill health or injury; damage to property, plant, products or the environment; production losses, or increased liabilities.

According to Colvin and Colvin (1999), approximately 10% of workplace accidents occur because of unsafe conditions, processes or facilities, 15% are due to employee or human error and 75% are due to errors, oversights or omissions in policies, procedures and practices. They add that as safety professionals obtained more formal management skills, education and training and having worked within the

management organization, the root causes of accidents became more focused on the management systems, policies, procedures, practices and/or priorities that control the day to day work activities of employees.

Reese (2003) writes that causes of accidents/incidents can be either direct or indirect. He explains that direct causes involve release of energy and / or hazardous material and lists down the sources of energy as mechanical, electrical, thermal, chemical and radiation and hazardous materials to include compressed or liquefied gases, corrosive, flammable and oxidizing materials and dust. He adds that indirect causes are unsafe acts and / or unsafe conditions. He gives examples of unsafe acts as failure to warn co-workers or secure equipment, ignoring tool/equipment defects, improper lifting or working position, improper use of equipment, and violation of safety and health rules and unsafe conditions as congested work areas, defective machinery/ tools, unguarded machinery, poor illumination or ventilation, exposure to radiation and excessive noise.

ILO (2005) advises that it is imperative to study the factors that are likely to favour occurrence of accidents as by studying such factors, the root causes of accidents can be isolated and necessary steps taken to prevent the recurrence of the accidents.

It groups the root causes of accidents as "immediate" and "contributing". The immediate causes are unsafe acts of the worker and unsafe working conditions. The contributing causes could be management-related factors, the environment and the physical and mental condition of the worker. A combination of causes must converge in order to result in an accident.

Croner Publications (1996) indicates that there is need to report and compile both accident and ill health data as this provides knowledge for use in the prevention of occupational injuries, fatalities and other forms of harm such as toxic exposures with long-term effects. These data is also useful in assessing needs for compensating victims for injuries previously incurred. Other purposes for the compilation of accident and ill health statistics include estimating the causes and magnitude of accident problems, identifying and prioritizing preventive measures, evaluating the effectiveness of preventive measures, monitoring risks, conducting awareness campaigns and providing feedback for those involved in prevention.

Bird (1974) avers that the ratio of serious or disabling injuries to minor injuries which only require first aid and the near misses is 1:10:600 and therefore the key to reducing serious injuries is to work on reducing the near misses which will translate to reduction of both the minor and major injuries ( Thomas, 1999).

Information from annual reports of DOSHS indicate that in 2003, a total number of 1599 accidents were reported out of which, 66 were fatal and in 2004 there were 1387 accidents with 95 of them being fatal while in 2005, a total of 1829 accidents were reported out of which 86 were fatal.

Analysis of the accidents for year 2003, which is the latest available analysis from the department, shows that out of the 827 non fatal accidents that the department was able to classify by causation, majority of the accidents were caused by machinery, 28.5%, followed by cuts by tools or objects, 21%, being struck by objects, 12.2%, motor vehicles 11.5 % and fall of persons, 8.15%. Of the fatal accidents, 50% were

attributable to motor vehicles, 25% resulted from assaults while fall from heights, cuts by tools/ objects and electricity contributed 5% each.

### 2.4.2 Ill health.

A worker is susceptible to all the health problems likely to be seen among members of the general community besides suffering from occupational diseases as well as what are termed work related diseases (Jeyaratnam, 1992). Workplaces are full of materials and processes which are potentially hazardous to health and according to ILO as reported in the ILO African Safety and Health Project (1990), occupationally related illnesses still occur extensively in many industries notwithstanding that safety and health should not be traded just to have a job.

The ILO African Safety and Health Project (1990) reports that chemicals capable of causing cancer, lung diseases, and blood and bone disorders, loss of mental ability, central nervous debilitation, infertility and death are common place in the factory and farm. It adds that in addition to physical and mental strains exerted on the worker through noise, vibration, extremes of heat and cold, both ionizing and non-ionizing radiation and with the body having no natural protection against extreme exposures, many workplaces are potentially inhospitable to the worker.

The United States department of Health and Human Services review of 1985 listed the ten leading work related diseases and injuries as follows:

i. Occupational lung diseases: asbestosis, byssinosis, silicosis, coal workers' pneumoconiosis, lung cancer and occupational cancer.

ii. Musculoskeletal injuries: Disorders of back, trunk upper extremity, neck lower extremity and trauma induced Raynaud's phenomena.

iii. Occupational cancers (not lung): Leukaemia, mesothelioma, cancer of nose, bladder and liver.

iv. Severe occupational traumatic injury: Amputations, fractures, eye loss, lacerations and traumatic deaths.

v. Cardiovascular diseases: Hypertension, coronary artery disease, acute myocardial infarction.

vi. Disorders of reproduction: Infertility, spontaneous abortion, teratogenesis.

vii. Neurotoxic disorders: Peripheral neuropathy, toxic encephalitis, psychoses, extreme personality changes (related to exposure).

viii. Noise induced hearing loss.

ix. Dermatologic conditions: Dermatoses, burns (scalding), abrasions

x. Psychologic disorders: Neuroses, personality disorders, alcoholism, drug dependency.

A survey to assess prevalence of self-reported, work-related illness carried out in England and Wales showed that of all the disorders thought to be due to work, around 50% were musculo-skeletal with the other conditions including stress, depression, heart disease, headaches and eye strain featuring prominently. (Labour Force Survey, UK, 1990)

Reese (2003) reports that occupational illnesses are not as easily identified as injuries. He cites the Bureau of Labour Statistics in USA where in 1999, there were 5.7 million injuries and illnesses reported out of which only 372,000 cases were occupational illnesses. He says that many illnesses go unreported when the employer or worker is not able to link exposure with the symptoms the employees are exhibiting and that physicians fail to ask the right questions regarding the patient's employment history. He adds that workplace health hazards include chemical hazards which arise from excessive airborne concentrations of mists, vapours, gases or solids in form of dusts or fumes which, apart from inhalation, may act as skin irritants or if absorbed through the skin may be toxic; physical hazards which include excessive levels of ionizing and non-ionizing radiation, noise, vibration and extremes of temperature and pressure; ergonomic hazards which include improperly designed tools or work areas, improper lifting or reaching, poor visual conditions or repeated motions in an awkward position; biological hazards including insects, moulds, fungi, viruses, vermin and bacteria.

Croner publications (1996), report that there are a number of factors which make it difficult to estimate how much ill health is due to work and how many cases will occur in the future. These factors are as follows:

- Contributory factors.

  A main difficulty in establishing a cause for conditions such as cancer is that there may be a number of different contributory factors which give rise to the condition. Where a cancer may be thought to be related to exposure to a substance at work, it is relevant to consider other contributory factors. Where

a disease is known to be specifically due to a particular substance to which an individual has been exposed at work, then it is appropriate to draw the conclusion that the exposure and the development of the disease are related. Where, however, a condition is common, for example cancer of the lung, and where there is an already well established link between smoking and such cancers, there would not be such a strong work association. Other factors such as this are usually referred to as "confounding factors".

- Latent period

  There is commonly some latent or delay period between exposure to a hazardous agent and the development of manifestations of the disease process. This latent period may run to many years and in some conditions, for example mesothelioma following exposure to asbestos, it may be 40 or 50 years after exposure before the disease becomes apparent. There are, therefore, an unknown number of cases which will occur in the future which may be linked to past exposures.

**2.5 Medical examination of workers.**

According to Todd L. A. (1984) as cited by ILO SafeWork Book shelf (2005), medical examinations help in surveillance of health of workers by detecting the presence or absence of adverse health effects for an individual from occupational exposure to contaminants. Medical surveillance is performed because diseases can be caused or exacerbated by exposure to hazardous substances.

Todd (1984) continues to say that medical surveillance programmes provide steps to protect, educate, monitor and, in some cases, compensate the employee. They include pre-employment screening programmes, periodic medical examinations , specialized tests to detect early changes and impairment caused by hazardous substances. Pre-employment screening involves the evaluation of occupational and medical history questionnaires and results of physical examinations . There are ethical and legal implications of pre-employment screening programmes if they are used to determine employment eligibility. However, they are fundamentally important when used to provide a record of previous employment and associated exposures, establish a baseline of health for an employee and test for hyper susceptibility. Medical examinations can include audiometric tests for hearing loss, vision tests, and tests of organ function, evaluation of fitness for wearing respiratory protection equipment, and baseline urine and blood tests.

Periodic medical examinations are essential for evaluating and detecting trends in the onset of adverse health effects and may include biological monitoring for specific contaminants. (ILO SafeWork Book shelf, 2005)

Medical examinations were made mandatory in Kenya in 2005 vide Factories and other Places of Work (medical examination) rules, 2005 (LN 24/2005).

The rules apply to all employees in every workplace and places a duty on all employers to ensure that, all persons employed in specified occupations undergo both pre-employment and periodical medical examination carried out by a medical practitioner authorized by the Director of Occupational Safety and Health services (Rule 4(1)).

The rules specify occupations where employees must be subjected to medical examinations and include work involving handling animals or their products, arsenic and its compounds, asbestos, exposure to benzene, cadmium, iron, lead and its compounds, manganese and its compounds, mercury and its compounds, nickel, chromium, beryllium, tar, pitch, bitumen, creosote and vinyl chloride monomer. Other occupations are where ionising and non-ionising radiations are emitted, work in adverse atmospheric pressure and compressed air environments, handling fossil oil, work involving exposure to silica, noise, organophosphate pesticides, carbamates and other pesticides, exposure to sisal, cotton, bagasse and mouldy hay. The rules also place an obligation on all employees and former employees falling under the above occupations to undergo medical examination and the medical practitioner carrying out the examination is required to keep medical records in respect of each employee which should be kept updated with each subsequent examination (First schedule (LN 24/2005)).

Rule 6(2) requires the medical practitioner to compile a summary report in prescribed form and submit it to the director within twenty one days and a copy to the employer. Further, the practitioner is obliged to notify the director of any abnormal results including any disease that may have arisen as a result of the employee's occupation.

**2.6 Effects of accidents and ill health on workplaces.**

Colvin and Colvin (1999) state that accidents and ill health in workplaces results in time loss by an injured employee beyond the actual time at home away from the job and after the return to work while still being treated usually performing what is

termed ‘light duty’ in the short term and which may end up being long term ‘light duty’ from illness such as back injuries, strains, carpal tunnel, etc.

They argue that there is also loss and / or reduced production until the injured employee fully returns to work or until a replacement employee comes up to speed with operations if the employee’s duties are being done by somebody else. They add that decreased production may also arise as a result of workers becoming fearful for their safety after occurrence of a serious accident including interruption of production as accidents can cause production to stop or decrease.

Colvin, et al (1999) further argue that there may be overtime payment for other employees who must perform injured employee’s duties if a replacement cannot be obtained and court fines as a result of violation involved resulting in an employee’s accident or ill health. Besides, there is also the likelihood of damage to machinery, equipment, product, facility in the event of an accident not to mention increased insurance costs, delays in orders or contractual deadlines and negative publicity resulting in damage to company’s reputation. Finally, Colvin, et al (1999) assert that good employees do not want to work in a company where employees are injured and that some companies are afraid to do business with suppliers who might not be able to honour orders in time due to accidents or ill health of employees and those which suffer negative attitudes from the neighbourhood and community.

Kenya enacted the Work Injury Benefits Act (WIBA) in 2007 which replaced the Workmen Compensation Act for the purpose of compensating employees in the event that they suffer from work related injuries and diseases.

Among other requirements, the law requires all employers to obtain and maintain an insurance policy against any liability that the employer may incur as a result of any of his employees being injured while at work. It is also mandatory for an employee who is involved in an accident and suffers disablement or death in the course of his employment to be compensated. Similarly, an employee should be compensated if he/she contracts a disease that may arise out of and in the course of employment. It is also a requirement that an employer provides and maintains appliances and services for rendering first aid to his employees in case of any accident in addition to making available necessary conveyance for an employee who suffers an injury to a medical facility and back to the employee's residence.

OSHA (2006) states that there are many hidden costs which management erroneously believe do not affect their profit performance. It goes further to state that there are two main types of costs which arise after an accident takes place which can be broadly classified as insured and uninsured (hidden cost).

The insured costs, which are covered by Workers' Compensation, include medical attention, hospitalization, rehabilitation etc. However, this only represents a tip of the iceberg and like all icebergs, the mass below the surface represented by the hidden costs is the most dangerous.

**2.7 Management commitment to health and safety.**

Health, environment and safety management activities in industrial and other enterprises are and will remain the primary responsibility of the employer in close cooperation with the employees and their representatives (Baranski, 2001). In its

guide for company directors, managers and health and safety representatives, the HSE (2000) sends out a message that organizations should manage health and safety risks with the same degree of expertise and to the same standards as other core business activities. Fuller and Vassie (2004), aver that given that the key function of a management is to maintain and develop an organization, the role of management should be to act as both housekeeper and entrepreneur. They argue that management should demonstrate leadership by providing the resources, motivation, priorities, and accountability for ensuring safety and health of its workforce. They advocate integrating safety and health concerns into everyday management of the organization, just like production, quality control, and marketing as this allows for a proactive approach to accident prevention and demonstrates the importance of working safety and health into the entire organization.

On his part, Petersen (1997) claims that the subjects of leadership and culture are the two most important considerations among the conditions necessary to achieve excellence in safety. He states that, leadership through its actions, systems, measures and rewards, clearly determines whether or not safety will be achieved in the organization. He affirms that Safety through leadership is more fulfilling, more rewarding, more economical, and more democratic than safety by work group imposition or indeed by government imposition.

### 2.8. Health and Safety Management Systems

Traditionally, occupational safety and health management mainly focused on compliance with legislation which is reactive rather than proactive. In the recent past, several models for occupational safety and health management systems have been

developed to improve occupational safety and health performance driven on realization by the businesses that there is need to integrate occupational safety and health into other business systems (Muchiri F, 2005). The International Labour Organization convention 155 provides a point of reference for establishment of occupational safety and health management systems at both national and enterprise level.

Occupational Health and Safety assessment Series Specification (OHSAS 18001) defines occupational health and safety management system as part of the overall management system that facilitates the occupational health and safety risks associated with the business of an organization. This includes the organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing and maintaining the organization's occupational health and safety policy.

On its part, Health and safety Authority (2007) describes a health and safety management system as a process put in place by an employer to minimize the incidence of injury and illness to workers involved in the operations carried out by the employer. This is accomplished through identification, assessment and control of risks to workers in all workplace operations. The scope and complexity of a health and safety management system will vary according to the type of workplace and the nature of operations carried out.

The ILO guidelines on Occupational Safety and Health Management Systems (ILO-OSH 2001) recommend that OSH Management Systems in an organization should have five main elements namely policy, organizing, planning and implementation,

evaluation and action for improvement. Policy should contain an organization's OSH policy and worker participation while organizing should include the elements of responsibility and accountability, competence and training, documentation and communication to ensure that the management structure is in place and the necessary responsibilities are allocated for delivering the OSH policy.

Planning and implementation should cover initial review, system planning, development and implementation of OSH objectives and hazard prevention while evaluation should involve OSH performance monitoring and measurement, investigation of work related injuries, ill-health, diseases and incidents, audit and management review. It is supposed to show how the OSH management system functions and identifies any weaknesses that need improvement and includes the element of auditing. Action for improvement should cover the element of undertaking preventive and corrective action as identified by the evaluation and audits carried out.

It should emphasize the need for continual improvement of OSH performance through constant review of policies, systems and techniques to prevent and control work-related injuries and ill health.

**2.9 Safety and Health Policies.**

A safety and health policy is a written document which recognizes that safety and health is an integral part of the organization's business performance. A policy spells out an organization's intentions and approach to its overall safety and health

performance and provides a framework for action and for the setting of the organization's safety and health objectives and targets (HSA, 2007).

The ILO Guidelines on occupational safety and health management systems (2001) recommend that at the enterprise level, occupational safety and health policy should be set out by the employer in consultation with workers and their representatives, communicated and be accessible to all persons at the place of work and be regularly reviewed for continuing suitability. The guidelines require that, as a minimum, the policy should include protection of safety and health of all members of the organization by preventing work-related injuries, ill health, diseases and incidents, compliance with relevant occupational safety and health national laws and regulations, voluntary programmes, collective agreements on occupational safety and health and other requirements to which the organization subscribes. It should also ensure that workers and their representatives are consulted and be encouraged to participate actively in all elements of the Occupational Safety and Health management system whose performance should be continually improved.

The guidelines also stipulate that the policy should have clearly spelt out responsibilities and accountability with the employer having the overall responsibility and providing leadership for occupational safety and health activities in the organization. In this regard, the guidelines recommend that a person or persons at the senior management level should be appointed with responsibility, accountability and authority for the development, implementation, periodic review and evaluation of the occupational safety and health management system and should be reporting periodically to the senior management on the performance of the

occupational safety and health management system. Further, resources to ensure that persons responsible for occupational safety and health including the safety and health committee can perform their functions properly should be provided and that all persons are competent to carry out the safety and health aspects of their duties and responsibilities.

The ILO guidelines emphasise the importance of the policy capturing occupational safety and health records and identify such records to include, among others, work-related injuries, ill health, diseases and incidents, workers' exposures, surveillance of the working environment and workers' health. Arrangements for emergency prevention, preparedness and response should also be established and maintained in addition to developing and reviewing periodically procedures to monitor, measure and record occupational safety and health performance on a regular basis. According to the guidelines monitoring provides a feedback on occupational safety and health performance and determines whether the day-to-day arrangements for hazard and risk identification, prevention and control are in place and operating effectively.

The guidelines group monitoring into active and reactive monitoring and recommend that for active monitoring, the policy should contain elements necessary to have a proactive system. The elements should include systematic inspection of work systems, premises, plant and equipment, surveillance of the working environment including work organization and workers' health, in order to determine the effectiveness of prevention and control measures. Compliance with applicable national laws and regulations, collective agreements and other commitments on occupational safety and health to which the organization subscribes should also be

included. According to the guidelines, reactive monitoring should include the identification, reporting and investigation of work-related injuries, ill health, diseases and incidents including damage to property. Thomas (1999) adds that reporting of accidents and cases of ill health give organisations valuable insights into their causes and help organisations to focus on the required activities to prevent their occurrence thus acting as a proactive measure.

Kenya has made it mandatory for employers vide section (7) of the Occupational Safety and Health Act, 2007 to prepare and revise as often as may be appropriate a safety and health policy, in line with the ILO guidelines.

**2.10 Safety and Health Audits.**

"Audit" originates from Latin word meaning "to hear" because when audits were first introduced to assess an organization's financial accounts an audit involved an oral presentation (Fuller and Vassie, 2004).

The Committee on Basic Auditing Concepts (1973) as cited by Fuller and Vassie (2004) defines auditing as a systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events to ascertain the degree of correspondence between those assertions and established criteria and communicating the results to interested users. Assertions are the claims and /or representations made by management about an issue and the auditor is to determine whether these claims are fair by gathering qualitative and /or quantified data to support or refute the claims. The Institute of Internal Auditors (2003) explains that an audit can be either internal or external. It adds that an internal audit is an

independent, objective assurance and consulting activity designed to add value and improve an organization's operations and it helps to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes.

On the other hand external auditing provides an independent view of the assertions made by an organization's management and normally represents the interests of stakeholders other than the organization's management team.

In the field of occupational safety and health, the Health and Safety Executive (2000) defines auditing as the structured process of collecting independent information on the efficiency, effectiveness and reliability of the total safety and health management system and drawing up plans for corrective action. It adds that auditing examines each stage in the health and safety management system by measuring compliance with the controls the organisation has developed, with the ultimate aim of assessing their effectiveness and their validity for the future.

Innes J. (2009) explains that a safety and health audit may have a number of purposes, including identifying strengths and weaknesses of an occupational safety and health management system, measuring OSH performance, establishing the extent of legal compliance, defining areas that require improvement and comparing the company's performance with an established standard. He advises that in carrying out an audit, the auditing process should include understanding the organization being audited, interviewing key persons, asking questions, reviewing documentation e.g. policy statement, procedures manual, inspection records, accident statistics and investigation reports, etc. and observing work conditions.

The HSE's audit protocols and procedures include, as key requirements for a successful audit process, allocation of resources to the audit process and competent auditors who have the appropriate training and skills to be able to assess physical, human and other factors and the use of procedures as well as documents or records (HSE, 2000).

Wherever possible, the auditor should be independent of the activity being audited and if necessary may include support from a wide range of specialists. Also included in the protocols and procedures are methodologies for conducting and documenting the audits which include checklists, questionnaires, interviews, measurement and direct observation, procedures for reporting audit findings to those responsible to facilitate timely corrective action and improvement. A system for tracking the implementation of audit recommendations is also included.

The Queensland state of Australia audit program assesses organizations on a criteria based on workplace health and safety "best practice" in ten areas. These are existence of a written policy and evidence of management commitment and effective communication of the policy, delegated specific responsibilities in the area of health and safety to managers as part of their management function, existence of a system requiring contractors/suppliers to conform to the company's workplace health and safety standards and procedures, evidence of consultation on safety and health issues within an organization, evidence of existence of a system to identify, evaluate and control hazards in and around the workplace.

Others are whether there exists evidence of a system which allows dissemination of information within the organization, training needs of workers as they carry out their

day to day activities including new workers and whether specific requirements for safe operations of machinery, plant and equipment are met.

On its part, the health and safety audit program of the Workers' Compensation Board of British Columbia, Canada, lists down the elements to be evaluated in the auditing process as occupational health and safety policy, occupational Health and Safety Committee, hazard control, training and instruction of workers, supervision, investigation of accidents and occupational hazards, monitoring of hazardous materials and health, regular inspections, first aid services and emergency response and a periodic review of the occupational health and safety program.

Kenya has developed a code of practice on occupational safety and health auditing to provide guidelines for safety and health auditing in the country (Code of Practice on OSH, 2008).

According to the code, the audit process should cover such issues as the existence and implementation of a safety and health policy in a workplace, safety and health training programmes, pre-employment, periodical and post- employment medical examination of workers, information on occupational accidents and diseases, safe work procedures including availability and accessibility of operating manuals for machinery and equipment, information on hazardous substances used in the workplace and availability of material safety data sheets. Documentation of safe handling procedures for hazardous substances and level of awareness of workers with regard to handling of the substances and identification of dangerous work processes which require permits to work and whether the permits are available and

complied with by both employers/management staff and employees should also be covered by the audit.

The Code also requires the audit to identify procedures put in place for contractors and suppliers, emergency response plan and its implementation, safety of machinery and equipment and availability of suitable personal protective equipment. Other aspects that an audit should cover include ventilation, height of workrooms and space for each employee, plant and machinery layout, housekeeping, lighting, noise, vibration, radiation, thermal conditions and extremes of pressure, ergonomics and welfare facilities.

Other techniques for measuring safety and health control in workplaces apart from audits are risk assessment, health and safety monitoring, health and safety surveys and inspections.

A risk assessment involves a systematic analysis of work activities by a competent person to identify the inherent hazards and the extent and possible consequences of any resulting risks. Any significant risks identified must then be eliminated or mitigated until the level of residual risk is negligible. Safety and health monitoring checks that objectives and standards are complied with to avoid injury, ill health or damage to property from occurring while safety and health surveying is a preliminary activity to establish which health and safety issues need to be addressed.

Safety and health inspections focus on the broader aspects of health and safety issues, including standard setting and identify inefficiencies hence reducing the risk

of accidents. Inspections can be carried out on a voluntary basis or as a requirement of specific legislation. (Croner's Health and Safety publications, 1996)

The Occupational Safety and Health Act, 2007 provides for risk assessments and inspections in addition to audits in Kenyan workplaces.

### 2.11 Inspections vis-a-vis Audits

According to Colvin & Colvin (1999), there is a major difference between the methodology and reasoning between an inspection and an audit. They say that in an inspection, there is a need to identify what exactly is going to be inspected and what will be looked for during the inspection while the purpose of an audit is to measure the management's role and its success and failure in controlling safety and health activities in an organization. Audit is more an administrative process to identify broader managerial issues while an inspection is more of a physical inspection process to find unsafe conditions

### 2.12 Health and Safety Advisers

Croner's Health and Safety Publications (1996), advises that in order to carry out meaningful and comprehensive safety audits, those undertaking the work must be competent in the techniques of auditing and the principles of the causes and prevention of loss. It is also important for auditors to possess good interpersonal skills because it is easy for the auditing process to result in "confrontation" between the auditor and those being audited. An objective approach which is not critical is needed. To overcome human fallibility, it may be beneficial to have an audit team consisting of two or more auditors. The publications add that identification of

deficiencies is necessary to help improve performance and should not be seen as a means to attribute blame. Further, Health and Safety Advisers should have the competence to advise both management and employees with authority and independence.

According to the Safety, Health and Welfare at Work Act 2005 of Ireland, a person is deemed to be a competent person where, having regard to the task he or she is required to perform and taking account of the size or hazards (or both of them) of the undertaking or establishment in which he or she undertakes work, the person possesses sufficient training, experience and knowledge appropriate to the nature of the work to be undertaken.

Safety and health advisers must possess sufficient training, experience and knowledge appropriate to the work to be done. They should be capable of advising on formulating and developing safety and health policies, not just for existing activities but also with respect to new acquisitions or processes.

Safety and health advisers should promote a positive safety and health culture in the organisation and securing the effective implementation of safety and health policy, planning for safety and health including the setting of realistic short and long term objectives, deciding priorities and establishing adequate systems and performance standards, day-to-day implementation and monitoring of policy and plans, including accident and incident investigation, reporting and analysis, reviewing performance and auditing the whole safety and health management system (HSE, 2000).

## 2.13 Environmental Audits in Kenya

According to the Environmental (Impact Assessment and audit) Regulations, 2003, an environmental audit study should be undertaken on projects, both new and ongoing, that are likely to have adverse environmental impacts. The initial audit must be carried out by a qualified and authorized environmental auditor or inspector registered by NEMA.

Subsequent audits can be carried out by the proponent on a regular basis and submitting the audit report to NEMA annually or as may be prescribed by the authority and must ensure the audit has been carried out in accordance with the environment management plan developed after the initial audit.

An environmental management plan contains all details of project activities, impacts, mitigation measures, time schedule, costs, responsibilities and commitments proposed to minimize environmental impacts of activities. In carrying out the audit, it should be ensured that appraisal of all project activities gives adequate consideration to environmental regulatory frame works, environmental health and safety measures and sustainable use of natural resources.

The rules categorises environmental audits into control audits and self audits. A control audit is the one that is carried out by NEMA as the regulating authority when it deems it necessary to check compliance with environmental parameters or to verify self auditing reports. A self audit is carried out by the proponent to ensure implementation of an environmental management plan and a report prepared and submitted to NEMA.

The Environmental (Impact Assessment and audit) Regulations,2003 stipulate that an environmental audit should include project description, extent of compliance with the conditions of environmental management plan, an evaluation of proponent's knowledge and awareness of and responsibility for application of relevant legislation, existing project documentation related to all infrastructural facilities and design, monitoring programs, parameters and procedures in place for control and corrective actions in case of emergencies. Records of incidents and accidents and likelihood of future occurrence of incidents and accidents should also be included. Buildings, premises and yards in which manufacturing, testing and transportation takes place within and without the project area including areas where goods are stored and disposed of should also be inspected and all significant risks associated with such activities recorded. An examination of health and safety issues including seeking views of the project employees, local and other communities who have the potential of being affected should be made in addition to preparing a list of health and environmental concerns of past and on-going activities.

The environmental audit report should include a presentation of the type of activity being audited, an indication of raw materials , final and by- products and waste generated, a description of the different technical activities, processes and operations of the project, a description of the national environment legislative and regulatory frameworks on ecological and socioeconomic matters, prioritization of all past and on-going concerns of the project, an identification of all environmental and occupational health and safety concerns of the project.

An opinion on efficacy and adequacy of the environmental management plan of the project and detailed recommendations for corrective activities, their cost, timetable and mechanism for implementation and an indication of the measures to be taken under the environmental management plan to ensure implementation is of acceptable environmental standards should be indicated. A non-technical summary of the key findings, conclusions and recommendations of the auditor should also be included.

The regulations also provide that a member of the public may petition NEMA to cause an audit be carried out on any project and issuance of an improvement order to compel corrective measures be carried out to mitigate any environmental degradations that may be revealed during an audit study.

### 2.14 Conclusion

Review of literature has shown that safety and health auditing is valuable for identifying strengths and weaknesses of an occupational safety and health management system of an organization and for measuring its OSH performance. OSH auditing has been made mandatory in Kenyan workplaces since 2004 and it is expected that working conditions in these workplaces have improved with time. However, the literature review has not revealed any study that had been carried out prior to the current one to determine the impact of safety and health audits on improvement of working conditions in workplaces within Nairobi Metropolis.

# CHAPTER THREE

## 3.0 MATERIALS AND METHODS

To determine the impact of safety and health audits on improvement of working conditions in workplaces within Nairobi Metropolis, the number of workplaces that had been consistently audited from 2005 to 2008 was identified, the trend of recorded accidents and cases of ill health during that period then analyzed and finally perception of the workers on the working conditions in these workplaces determined. The implementation level of the recommendations contained in the audit reports was also determined by comparing the audit report of 2005 with the one of 2008 for each of the workplaces and the factors that affected implementation of recommendations contained in audit reports identified.

### 3.1 Study Area

The area under study covered the city of Nairobi and its immediate environs which include Machakos, Kajiando, Thika and Kiambu districts which forms Nairobi Metropolis.

The area selected for the study had the highest concentration of workplaces and the working population in Kenya. According to Kenya National Bureau of Statistics, in 2005 (the latest figures available at the time of this research), the wage employment in Nairobi Metropolis stood at four hundred and ninety eight thousand and eighty six persons (498,086) out of a total of one million eight hundred and seven thousand seven hundred (1, 807,700) representing 27.6 % of the working population in the country. The area has a diverse nature of workplaces which include horticulture,

manufacturing, building construction and works of civil engineering, mining and quarrying and the service industry which comprises of hotel, wholesale and retail trade, transport and finance. The wage employment by industry within the metropolis stood at twelve thousand one hundred and forty four (12,144) persons in agriculture and forestry representing 1.3 % of the total working population in the country, ninety nine thousand, eight hundred and nineteen (99,819) persons in manufacturing, representing 10.8 % and forty two thousand, five hundred and forty seven (42,547) persons representing 4.6%, in construction industry.

The road network within the study area was good and all the workplaces were accessible by public means. The workplaces were also not far apart from each other.

The area of study is shown in figure 3.1.


**Figure 3.1. Map of Kenya showing the area of study marked ★**

Source: 2007-2011 Kenya-Advisor.com

### 3.3. Sample size

The researcher tabulated records of all safety and health audit reports for years 2005, 2006 2007 and 2008 according to the name of the workplace, date of the audit, locality of the workplace and the safety and health adviser who carried out the audit and compiled a list for each year. The workplaces that appeared on all the four lists were selected. These were the workplaces which had consistently been audited every year from 2005 to 2008 and were found to be twenty (20) in number.

From the twenty workplaces, the ones falling within Nairobi Metropolis, the area of study, were selected and these totalled to sixteen (16).This number could have formed the sample size for this study.

However, out of these, six (6) belonged to one company which was a food processing firm and whose management structure was centralized.

The researcher therefore decided to pick one workplace at random to represent the other five. Among the other ten workplaces, DOSHS had instituted legal proceedings against one of them and the matter was still pending in court at the time of carrying out this research. The researcher therefore did not find it prudent to include it in the study. This left the researcher with ten (10) workplaces which formed the sample size of this research which was equivalent to 50 % of the target population.

It was assumed that all reports for the workplaces that had undergone safety and health audits had been submitted to the director's office as is required and information with regard to the workplace entered correctly in the database.

Eight (8) of the workplaces under study were operating on three shifts while each of the other two was operating on two shifts and one shift respectively. All the workplaces had a total workforce of one thousand two hundred and eleven (1211) employees. According to Gay (1983) and as cited by Mugenda and Mugenda (2003), for descriptive studies, 10% of the accessible population is enough sample size. The researcher therefore took a sample size of one hundred and thirty (130) employees through stratified random sampling which represented 10.7 % of the total number of

workers for this study. For convenience purposes, the researcher sampled the day shift workers (working from 7 am to 3 pm).

**Table 3.1. Number of shifts and sampled workers in each of the workplaces under study.**

| Workplace | No. of shifts | Number of workers | Number of sampled workers |
|---|---|---|---|
| **A** | **1** | **91** | **10** |
| **B** | **3** | **205** | **21** |
| **C** | **2** | **31** | **7** |
| **D** | **3** | **116** | **12** |
| **E** | **3** | **200** | **21** |
| **F** | **3** | **103** | **11** |
| **G** | **3** | **217** | **22** |
| **H** | **3** | **119** | **12** |
| **I** | **3** | **68** | **7** |
| **J** | **3** | **61** | **7** |
| **Total Number of Workers** | | **1211** | **130** |

### 3.4 Sampling Procedure

Once the workplaces forming the sample size was determined, all the workplaces were visited for the purpose of data collection since the number was manageable in

terms of time and the budget. It took the researcher an average of one day to collect data from each workplace adding up to a total number of ten days for data collection.

### 3.5 Research Design

According to Kombo and Tromp (2006) a research design can be thought of as the structure of research. It is the "glue" that holds all the elements in a research project together. A design is used to structure the research, to show how all the major parts of the research project work together to try to address the central research questions. Kothari (2004) indicated that decisions regarding what, where, when, how much, by what means concerning an enquiry or a research study constitute a research design. Research design will normally start by analyzing the research questions and focus the design work to address the issues and debate that will be generated by those questions (Mburu, 2006). The current research aimed at answering the following questions:-

1. Have workplaces been audited consistently since introduction of the audits in 2004?

2. What is the trend of occupational accidents and ill health since introduction of safety and health audits?

3. What is the perception of workers on the working conditions in their places of work?

4. What is the level of implementation of the recommendations contained in the audit reports?

5. What are the factors that affect the implementation of recommendations contained in the audit reports?

A descriptive design was used in this study as the researcher was interested in finding out the actual working conditions of the workplaces that had consistently undergone safety and health audits since 2005 and determine whether they had improved or not as a result of the audits.

Kombo and Tromp (2006), explain that the major purpose of a descriptive research is to describe the state of affairs as it exists and the researcher reports the findings. Kerlinger (1969) as cited by Kombo and Tromp (2006) points out that descriptive studies are not only restricted to fact findings, but may often result in the formulation of important principles of knowledge and solutions to significant problems. Orodho (2003), as cited by Kombo & Tromp (2006), adds that descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. It can be used when collecting information about people's attitudes, opinions, habits or any of a variety of education or social issues (Orodho & Kombo, 2002). According to Kothari (2004), several methods for collecting data including observation, questionnaires, interviewing and examination of records with their merits and limitations are available and the researcher may use one or more of these methods.

### 3.6 Research tools and data collection

The Factories and other Places of Work (Safety and Health Committee) rules, require a safety and health adviser to submit one copy of the audit report within thirty (30) days from the date of audit to the Director, DOSHS.

Another copy is required to be submitted to the area office of DOSHS under which the workplace that has been audited falls and a third copy is retained by management of the workplace. Upon receipt of Director's copy the data is entered into DOSHS database. This is the database from which the researcher used to determine the workplaces which have been consistently audited since 2005.

To answer some of the research questions, the safety and health audit reports for the workplaces under study were used. The audit reports for years 2005, 2006, 2007 and 2008 for each workplace under study, adding up to forty (40) audit reports were used.

Using the Kenyan Code of Practice on Occupational Safety and Health Auditing and comparing it with audit programs in Canada and Australia which identify elements to be evaluated in workplace safety and health "best practice", (literature review, section 2.10), the researcher picked the following ten elements of occupational safety and health for analysis

i. Availability of a written Safety and Health policy

ii. Documented assignment of responsibilities on safety and health

iii. Existence of a functional safety and health committee

iv. Records of occupational accidents

v. Records of cases of ill health

vi. Medical examination of workers as per the requirements of medical examination rules, Legal Notice no. 24 of 2005.

vii. Prominent display of operational procedures for machinery and equipment

viii. Provision of personal protective equipment and clothing

ix. Provision of appropriately marked and unobstructed fire exits

x. Existence of an emergency response plan

The initial audit report carried out in 2005 was scrutinised for each of the workplaces under study to determine the status of each of these elements during that year and this was compared with the situation in 2008, as captured in that year's audit report. This was used by the researcher to assess the working conditions in the workplaces in 2005 at the initial audit and 2008 when the workplace was last audited and be able to determine improvements in the working conditions if any in addition to the level of implementation of the recommendations in the audit reports.

In order to answer some of the other research questions, questionnaires were developed (see appendix 1 and 2).

A questionnaire was best placed to achieve the answers to the questions by use of both semi structured questions for employers or their representatives and closed ended one for the employees. The researcher did not find it prudent to use a

completely closed questionnaire for the employers or their representatives as this might have locked out some information which could be crucial to this research whereas an open ended questionnaire would have been very difficult to analyze due to the likelihood of a wide variety of responses. For the employees, due to the literacy level and the large number that was involved, the close ended questionnaire was deemed suitable by the researcher. All questionnaires were administered through face to face interview and each questionnaire was accompanied by a statement of informed consent (appendix 1 and 2) where the researcher introduced himself to the respondents and explained the purpose of the research. The respondents were assured of confidentiality of their contributions and inclusion of their names in the questionnaire was optional.

To ensure that the questionnaires were effective, the researcher discussed the questions with colleagues who were working with DOSHS and were therefore familiar with the issues being covered by the research and the necessary amendments made. This assisted in pre-testing the questionnaires.

The following are the reasons why face to face interview was the most preferred method of administering the questionnaires:

i. Measurement of individual knowledge and attitude can only be estimated by interview through a questionnaire.

ii. Behaviour and individual practice may also be determined through interview and observation, of which the former is more reliable.

Observation is the best for behaviour and practice but would require more time.

iii. Uniformity of answers was assured by use of structured questionnaire where all respondents were answering without any interruption.

iv. Semi structured questionnaire allowed the interviewer to alter the sequence of the questions and hence develop a rapport with the respondent.

v. Use of telephone or mobile phones is expensive.

vi. Use of mail could not have been necessary as the study area was easily accessible to the researcher.

The employers' questionnaire (appendix 2) sought to countercheck the findings of the safety and health audits in the workplaces and hence contained questions to address the issues that were being analysed in the audit reports.

In addition to these, it requested the employer or his representative to give the number of accidents and cases of ill health recorded by the respondent workplaces for years 2004 to 2008 and to give the reasons, if any, that hampered implementation of the recommendations contained in the audit reports.

Workers' perception of the working conditions was measured by administering a questionnaire (appendix 1) to a representative sample of workers in each workplace under study and responses measured on five point *likert* scale ranging from 1 = strongly agree to five = strongly disagree. A *likert* scale which is one of the rating

scales can be used to measure perception, attitude, values and behaviour (Mugenda & Mugenda, 2003).

Issues such as their involvement in safety and health committees, reporting of accidents and ill health, medical examination, safe use of machinery and equipment, provision of personal protective equipment, housekeeping and emergency preparedness were measured. A sample representative of workers in every department or section of each workplace under study was picked at random. They were at first interviewed orally to create a rapport after which the questionnaire was administered.

The researcher faced the challenge of having the respondents, both the employers and employees, releasing information freely. On entering the workplace, the researcher introduced himself as an occupational safety and health officer but went on to explain that the purpose of the visit was not to enforce the law but to seek information for research purposes. The fact that the researcher was working with DOSHS created uncertainty as to whether the information given would not be used to victimise the employer as the information may be incriminating.

The other worry on the part of the employers was whether the research findings would end up disclosing the names of the workplaces.

To allay these fears, face to face interviews were used and the researcher took the opportunity to create a rapport with the respondents and also reassured them that their names or the names of the workplaces they represented would not be quoted or specifically attributed as part of the findings of this research. On the part of

employees, they were not willing to give the information for fear of victimisation by the employer.

The researcher went round this problem by making it clear to them that they need not indicate their names on the questionnaire and ensuring that the employer or his representative was not present during the interview.

# CHAPTER FOUR

## 4.0 RESULTS AND DISCUSSION.

### 4.1 Results analysis.

One set of data was collected from audit reports of the selected workplaces and the other set from the employers or their representatives and the workers. There was a 100% response. The raw data was entered in Epidata version 3.01 and after it was entered, errors were checked using double entry and validated.

Once this was done, the data was exported to Statistical Package for Social Scientists (SPSS) for analysis. Further analysis was carried out by cross tabulation to clarify the relationships that existed between various issues for purposes of answering the research questions. Frequency tables, percentages, charts and graphs were used to present the findings upon which interpretations and conclusions were derived. To observe confidentiality, names of the workplaces were coded as A, B, C, D, E, F, G, H, I and J.

Classifying the workplaces by industry, motor vehicle repair, general engineering and leather processing industry had one (1) workplace each, four (4) were in chemical industry and three (3) were in food industry. This is represented in percentage form by Figure 4.1.

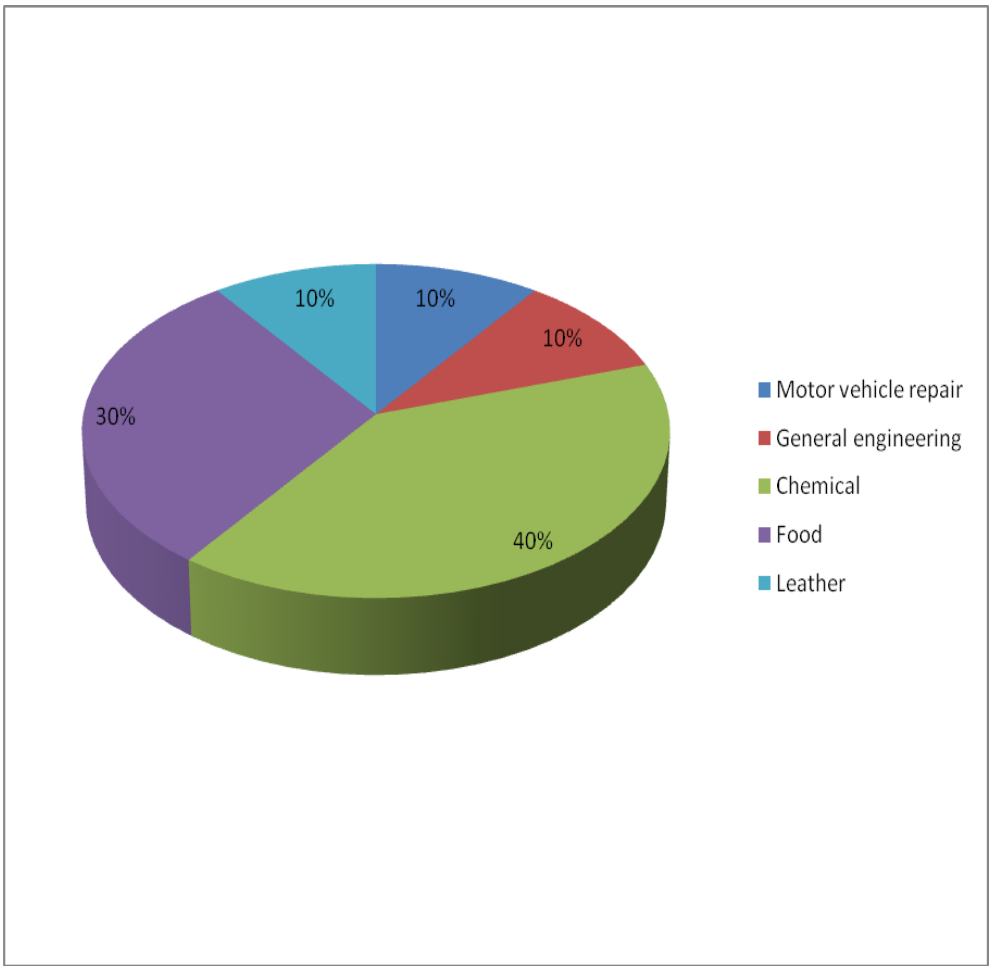


**Figure 4.1 Classification of workplaces under study by industry.**

One of the workplaces was operating one shift, eight (8) had three shifts each and one (1) operated two shifts per day as shown in Table 4.1 which also shows the products of each of the workplaces under study.

Table 4.1. Profile of the workplaces showing products and work shifts

| Workplace | Products | No. of shifts |
|---|---|---|
| A | Repaired vehicles | 1 |
| B | Fabricated items for use in building industry | 3 |
| C | Assorted chemicals | 2 |
| D | Plastic packaging materials and pens | 3 |
| E | Tissue paper and sanitary towels | 3 |
| F | Bread | 3 |
| G | Spices and snacks | 3 |
| H | Plastic and paper packaging materials | 3 |
| I | Leather and synthetic shoes | 3 |
| J | Maize and wheat Flour | 3 |

### 4.1.1 Audited workplaces from 2005 to 2008.

The first objective of this study was to identify the number of workplaces that had been audited from 2005 to 2008 in Kenya and determine the percentage of the workplaces that had been audited consistently since 2005.

Analysis of the database at DOSHS revealed that in 2005, safety and health audits were carried out on 315 workplaces while in 2006, 370 workplaces were audited and in 2007, 433 workplaces were audited. In 2008, the number of workplaces which were audited was 632. The results further showed that, out of the 370 workplaces audited in 2006, only 42 had been audited in the previous year (2005) representing 13.3 % and in 2007, of the audited 433 workplaces, only 89 workplaces had been audited in the previous year representing 24.05 % and in 2008, of the 632 audited

workplaces during the year, 181 representing 41.8% had been audited in the previous year. From 2005 to 2008, only 20 workplaces consistently underwent auditing every year representing 6.35% of the ones initially audited in 2005.

Table 4.1.1 gives a summary of the number of audited workplaces in Kenya from 2005 to 2008.

Table 4.1.1. Audited workplaces in Kenya from 2005 to 2008.

| Year | No. of audited workplaces during the year. | No. of workplaces which repeated the audit the following year. | Percentage of workplaces which repeated the audit the following year. | No. and percentage of workplaces consistently audited from 2005 to 2008 |
|---|---|---|---|---|
| 2005 | 315 | 42 | 13.33% | 20 (6.35%) |
| 2006 | 370 | 89 | 24.05% | - |
| 2007 | 433 | 181 | 41.8% | - |
| 2008 | 632 | - | - | - |

**4.1.2 Trend of recorded accidents and cases of ill health.**

The second objective of the study was to analyze number of recorded accidents and cases of ill health for years 2005, 2006 and 2007 and 2008 within Nairobi Metropolis and establish the trend. This was determined by requesting employers or their representatives to give the total number of accidents, both fatal and non fatal, and cases of ill health recorded by the workplaces for years 2005, 2006, 2007 and 2008.

All the workplaces responded and the following figures show the results.

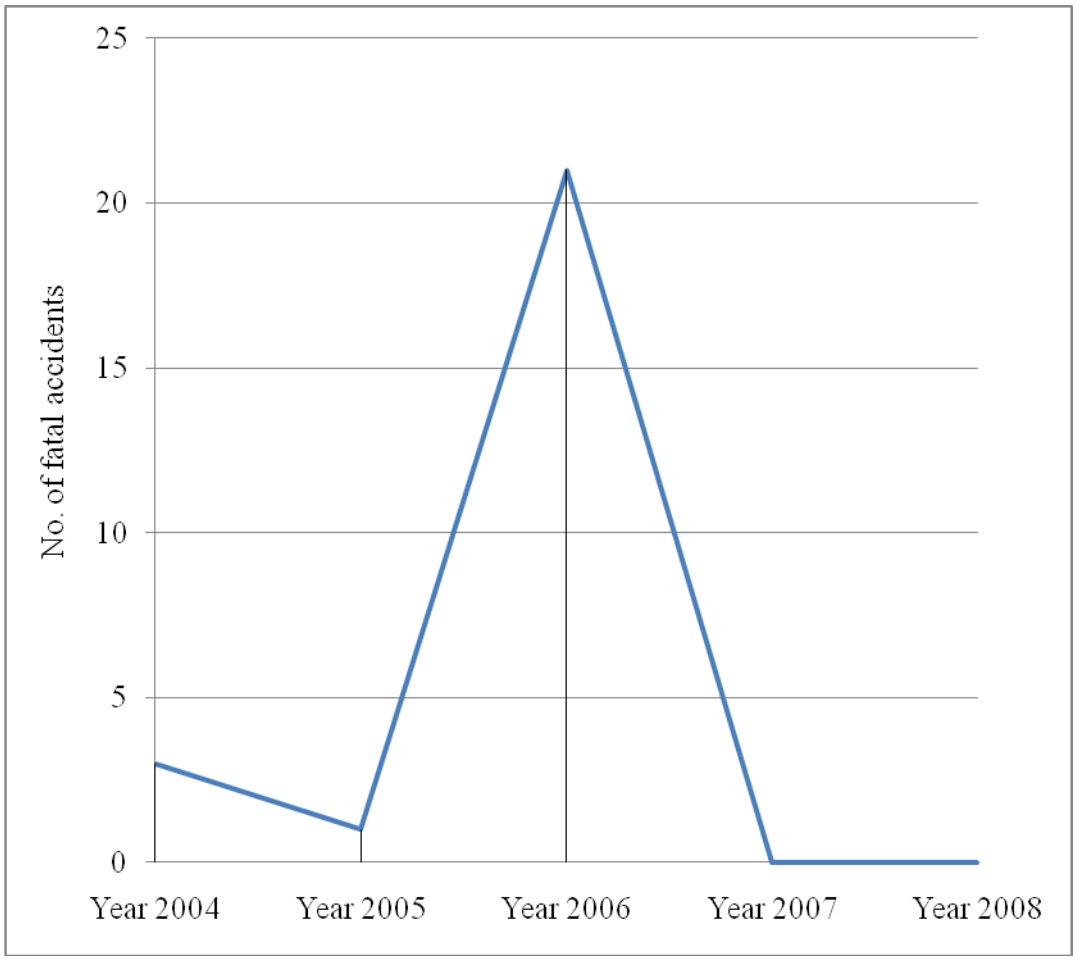


**Figure 4.1.2.1. Trend of fatal accidents from 2004 to 2008**

From figure 4.1.2.1 above, in 2004, a total of 3 fatal accidents were recorded in the workplaces under study which declined to 1 in 2005. However, in 2006, the fatal accidents shot up to 21. No fatal accident was recorded in any of the workplaces in 2007 and 2008.

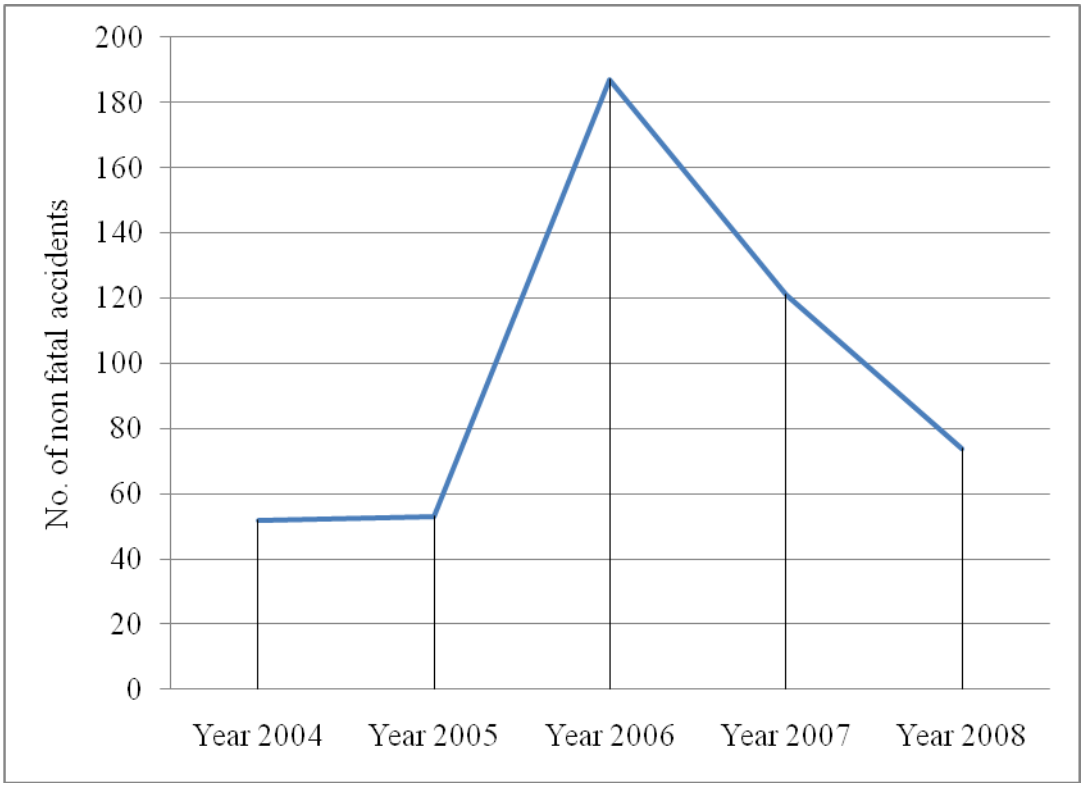


**Figure 4.1.2.2. Trend of non fatal accidents from 2004 to 2008.**

According to figure 4.1.2.2, in 2004, a total number of 52 non fatal accidents were recorded which increased just by 1 accident in 2005 to 53. However, in 2006, there was a sharp increase to 187, an increase of 352.8%. These reduced to 121 in 2007, a decrease of 64.7% and decreased further by 61.2% to 74 in 2008.

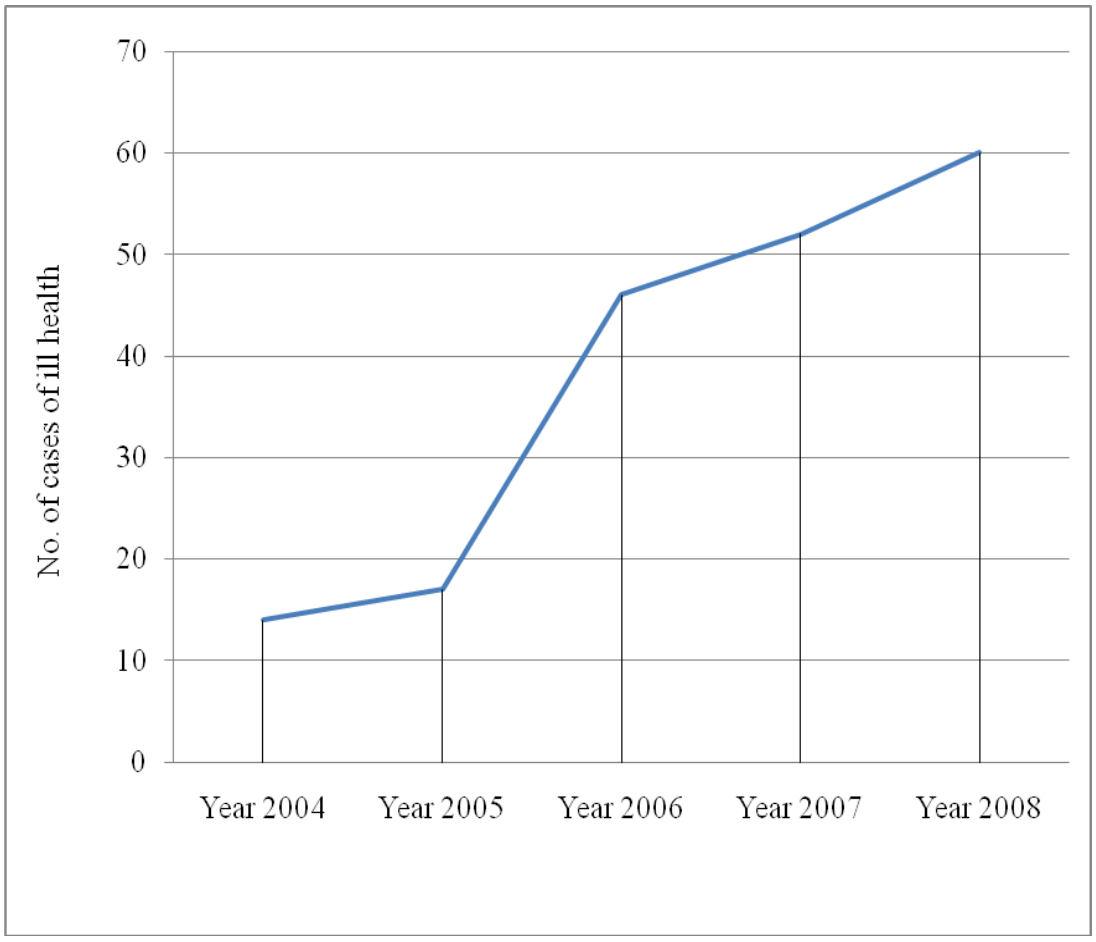


**Figure 4.1.2.3. Trend of cases of ill health from 2004 to 2008.**

From figure 4.1.2.3, cases of ill- health recorded rose from 14 in 2004 to 17 in 2005 and then shot up to 46 in 2006. These rose further to 52 in 2007 and 60 in 2008.

### 4.1.3 Perception of the workers on the working conditions in their places of work.

The third objective of this study was to find out perception of the workers on the working conditions in their places of work. This was determined by administering a questionnaire to the workers (appendix 1) some of which responses were cross checked with responses from a questionnaire administered to employers or management's representatives (appendix 2) in the respective workplaces.

#### 4.1.3.1 Results from employees.

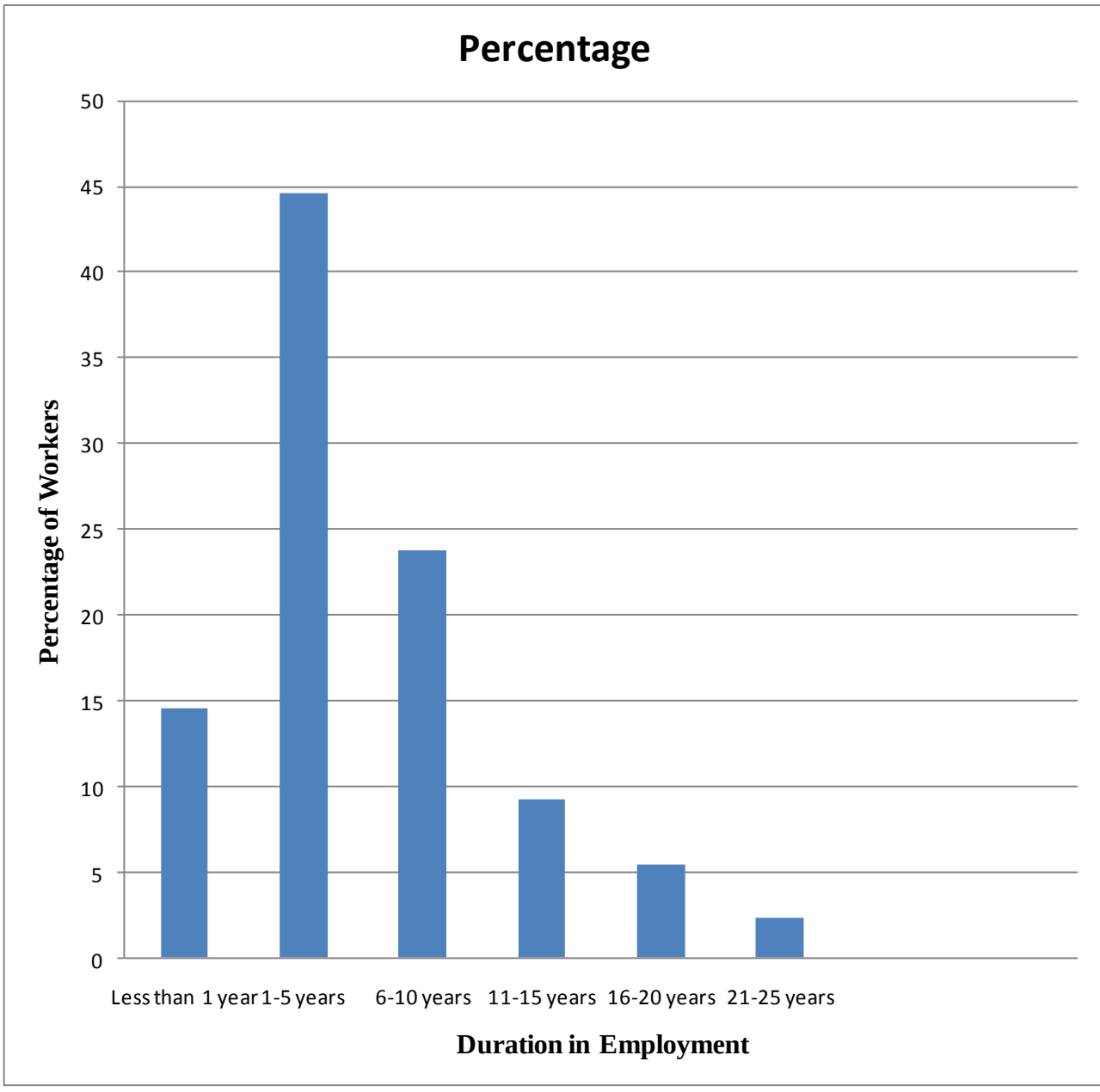


**Figure 4.1.3.1.1. Duration of employees in the workplace.**

Majority of the workers (44.6 %) had worked for between 1 to 5 years in their respective workplaces followed by those who had worked for between 6 to 10 years (23.8 %). Only 14.6 % of the workers had worked for less than 1 year. Overall, 85.4 % of the workers had worked for more than 1 year in the workplace.

Table 4.1.3.1.1. Contents of safety and health policy explained well

| Response | Frequency | Percent |
|---|---|---|
| Agree | 51 | 39.2 |
| Not sure | 61 | 46.9 |
| Disagree | 15 | 11.5 |
| No response | 3 | 2.3 |
| Total | 130 | 100.0 |

Even though all the workplaces had a written safety and health policy, only 39.2 % of the workers indicated that they had been explained the contents of the policy while 46.9 % were not sure. 11.5 % of the employees out rightly indicated that they had not been explained. Three (3) workers representing 2.3 % did not respond to the question.

Table 4.1.3.1.2. Workers were aware of existence of safety and health committee in the workplace.

| Response | Frequency | Percent |
|---|---|---|
| Yes | 120 | 92.3 |
| No | 7 | 5.4 |
| No response | 3 | 2.3 |
| Total | 130 | 100.0 |

92.3 % of the workers were aware of the existence of safety and health committees in their workplace while 5.4 % were not aware. There was no response from 3 workers representing 2.3 %.

Table 4.1.3.1.3. Workers know the role of safety and health committee

| Response | Frequency | Percent |
|---|---|---|
| Agree | 105 | 80.8 |
| Not sure | 11 | 8.4 |
| Disagree | 13 | 10.0 |
| No response | 1 | 0.8 |
| Total | 130 | 100.0 |

Majority of the workers, 80.8 %, indicated that they know the role of the committees while 10 % did not know. 8.5 % of the workers were not sure. There was no response from 1 worker representing 0.8 %.

Table 4.1.3.1.4. Safety and health committee representative consulted workers

| Response | Frequency | Percent |
|---|---|---|
| Agree | 74 | 56.9 |
| Not sure | 16 | 12.3 |
| Disagree | 35 | 26.9 |
| No response | 5 | 3.9 |
| Total | 130 | 100.0 |

According to table 4.1.3.1.4 above, 56.9 % of the workers were consulted by their safety and health committee representative every time the representative went for the committee meeting but 26.9 % disagreed that they were ever consulted. 12.3 % of the workers were not sure and 5 workers representing 3.8 % did not respond.

A cross tabulation was carried out to assist determine whether there was a relationship between awareness of existence of safety and health committee in the workplace and the number of years an employee had worked in the workplace and the result is as shown in table 4.1.3.1.5.

**Table 4.1.3.1.5. Cross tabulation of number of years worked with awareness of existence of safety and health committee.**

| | | Aware of HS Committee here | | | Total |
|---|---|---|---|---|---|
| | | Yes | No | No response | |
| No. of years worked | Less than 1 yr | 17 | 1 | 1 | 19 |
| | 1-5 yrs | 54 | 4 | 0 | 58 |
| | 6-10 yrs | 28 | 2 | 1 | 31 |
| | 11-15 yrs | 12 | 0 | 0 | 12 |
| | 16-20 yrs | 7 | 0 | 0 | 7 |
| | 21-25 yrs | 2 | 0 | 1 | 3 |
| Total | | 120 | 7 | 3 | 130 |

Out of the 19 workers who had worked for less than 1 year, only 1 was not aware of existence of safety and health committee in the workplace while out of the 58 who had worked for between 1 to 5 years, 4 were not aware. Out of the 31 workers who had worked for between 6 to 10 years, only 2 were not aware while all the workers who had worked for more than 11 years were aware of the existence of safety and health committees in their respective workplaces.

Table 4.1.3.1.6. Heard complaints of ill health due to working conditions.

| Response | Frequency | Percent |
|---|---|---|
| Yes | 48 | 36.9 |
| No | 82 | 63.1 |
| Total | 130 | 100.0 |

Majority of the workers, 63.1 %, had not heard a colleague complaining of ill health while 36.9 % had heard. All the workers answered this question.

Table 4.1.3.1.7. Complaint of ill health due to working conditions common.

| Response | Frequency | Percent |
|---|---|---|
| Yes | 15 | 31.3 |
| No | 30 | 62.5 |
| No response | 3 | 6.3 |
| Total | 48 | 100.0 |

Of the 48 workers who answered in the affirmative that they had heard complaints of ill health from a colleague due to working conditions, 30 representing 62.5 % indicated that the complaint was not common while 15 representing 31.3 % said it was common. 3 workers (6.3%) did not give a response.

Table 4.1.3.1.8. Safe work procedures explained on employment.

| Response | Frequency | Percent |
|---|---|---|
| Agree | 92 | 70.8 |
| Not sure | 21 | 16.2 |
| Disagree | 14 | 10.8 |
| No response | 3 | 2.3 |
| Total | 130 | 100.0 |

Table 4.1.3.1.8 above shows that 70.8 % of the workers had undergone induction training on safety and health while 10.8 % had not. 16.2 % of the respondents were not sure while 3 workers representing 2.3 % did not respond.

Table 4.1.3.1.9. Machines/equipment is safe for use.

| Response | Frequency | Percent |
|---|---|---|
| Agree | 103 | 79.2 |
| Not sure | 13 | 10.0 |
| Disagree | 9 | 6.9 |
| No response | 5 | 3.8 |
| Total | 130 | 100.0 |

Majority of workers, 79.2 % believed that the machines and equipment used in their workplaces were safe to use while 6.9 % disagreed and 10 % were not sure.

There was no response from 5 workers representing 3.8 %.

Table 4.1.3.1.1.10. Management required all injuries to be reported.

| Response | Frequency | Percent |
|---|---|---|
| Agree | 119 | 91.5 |
| Not sure | 8 | 6.2 |
| Disagree | 1 | .8 |
| No response | 2 | 1.5 |
| Total | 130 | 100.0 |

According to table 4.1.3.1.10 above, 91.5 % of the workers indicated that their respective managements required all accidents to be reported regardless of the severity with only 0.8% disagreeing while 6.2 % were not sure. 2 workers did not respond.

Table 4.1.3.1.11. Everybody provided with personal protective equipment and clothing.

| Response | Frequency | Percent |
|---|---|---|
| Agree | 105 | 80.8 |
| Not sure | 4 | 3.1 |
| Disagree | 21 | 16.2 |
| Total | 130 | 100.0 |

Majority of the workers, 80.8 % agreed that everybody in their workplace was provided with personal protective equipment and clothing while 16.2 % disagreed and 3.1 % were not sure. All responded to this question.

Table 4.1.3.1.12. Employees undergo medical examination before being employed.

| Response | Frequency | Percent |
|---|---|---|
| Agree | 81 | 62.3 |
| Not sure | 29 | 22.3 |
| Disagree | 20 | 15.4 |
| Total | 130 | 100.0 |

On pre-employment medical examination, 62.3 % of the workers agreed that all employees in their workplaces underwent medical examination before being employed in their respective workplaces while 15.4 % disagreed and 22.3 % were not sure.

Table 4.1.3.1.13. Instructions to keep work stations clean and orderly.

| Response | Frequency | Percent |
|---|---|---|
| Agree | 125 | 96.2 |
| Not sure | 1 | 0.8 |
| Disagree | 2 | 1.5 |
| No response | 2 | 1.5 |
| Total | 130 | 100.0 |

96.2 % of the workers indicated that their management required them to keep their work stations clean and orderly while 2 employees representing 1.5 % disagreed with 1 employee not being sure. 2 did not respond to this question.

Table 4.1.3.1.14. Everybody is aware of what to do in case of an emergency.

| Response | Frequency | Percent |
|---|---|---|
| Agree | 98 | 75.4 |
| Not sure | 22 | 16.9 |
| Disagree | 9 | 6.9 |
| No response | 1 | 0.8 |
| Total | 130 | 100.0 |

As per table 4.1.3.1.14, 75.4 % of the workers were of the view that everybody knows what to do in case of an emergency while 6.9 % disagreed. 16.9 % were not sure and 1 worker did not respond to this question.

Table 4.1.3.1.15. Fire exits not obstructed.

| Response | Frequency | Percent |
|---|---|---|
| Agree | 109 | 83.8 |
| Not sure | 7 | 5.4 |
| Disagree | 12 | 9.2 |
| No response | 2 | 1.5 |
| Total | 130 | 100.0 |

From table 4.1.3.1.15, 83.8 % of the workers were in agreement that all fire exits are kept free from obstruction while 9.2 % disagreed with 5.4 % not being sure. There was no response from 2 workers to this question.

### 4.1.3.2 Results from Employers

The first three questions in the employers' questionnaire (appendix 2) sought to know whether there was a written safety and health policy, whether there was somebody placed in charge of safety and health in the workplace and whether there was a safety and health committee in place and all the employers responded yes to these questions.

The results of the response to the rest of the questions are given on tables 4.1.3.2.1 through to 4.1.3.2.4.

Table 4.1.3.2.1. Number of times safety and health committee met in 2008.

| No. of times committee met | Frequency | Percent |
|---|---|---|
| 1 | 1 | 10.0 |
| 3 | 3 | 30.0 |
| 4 | 3 | 30.0 |
| 12 | 3 | 30.0 |
| Total | 10 | 100.0 |

In 2008, the safety and health committee met once in 1 workplace, three times in 3 workplaces, four times in 3 workplaces and on a monthly basis in three 3 workplaces.

Table 4.1.3.2.2. Minutes of the safety and health committee available.

| Response | Frequency | Percent |
|---|---|---|
| Yes | 9 | 90.0 |
| No | 1 | 10.0 |
| Total | 10 | 100.0 |

Minutes of safety and health committee were available in 9 workplaces representing 90 % of the workplaces while minutes were not available in 1 workplace (10 %).

Table 4.1.3.2.3. Safety and health adviser had discussed the 2007 audit findings with the safety and health committee.

| Response | Frequency | Percent |
|---|---|---|
| Yes | 3 | 30.0 |
| No | 7 | 70.0 |
| Total | 10 | 100.0 |

Table 4.1.3.2.3 shows that the safety and health adviser discussed with safety and health committee the audit report for 2007 in only 3 workplaces (30%) while there was no discussion in the majority of the workplaces (70 %).

Table 4.1.3.2.4. Safety and health audits are necessary.

| Response | Frequency | Percent |
|---|---|---|
| yes | 7 | 70.0 |
| No | 3 | 30.0 |
| Total | 10 | 100.0 |

To the question as to whether the employers found safety and health audits necessary, 70 % said yes while 30 % said no.

### 4.1.4 Level of implementation of recommendations contained in safety and health audit reports.

The fourth objective of the study was to verify the level of implementation of recommendations made in the audit reports by safety and health advisers. This was done by noting the status of each of the elements mentioned in section 3.6 of this thesis by perusing both the report of the initial audit carried out in 2005 and the last audit report carried out in 2008 and checking to see whether the recommendations made in the first audit report in respect of each of the issues raised by the safety and health adviser were satisfactorily dealt with as reflected in the 2008 audit report.

The results are as given in table 4.1.4.1.

Table 4.1.4.1. Implementation of recommendations contained in the audit reports by the workplaces under study.

| Issue | No. of workplaces the issue had been in place at the initial audit (2005) | No. of workplaces the issue had been implemented at the last audit (2008) |
|---|---|---|
| Safety and Health Policy | 3 | 10 |
| Documented assignment of responsibilities | 0 | 2 |
| Functional safety and health committee | 4 | 10 |
| Recorded cases of Occupational accidents | 2 | 9 |
| Recorded cases of ill-health | 1 | 5 |
| Undertaking of Medical examination of workers | 0 | 4 |
| Operational procedures prominently displayed | 0 | 2 |
| Provision of suitable personal protective equipment and clothing | 9 | 10 |
| Provision of unobstructed and marked fire exits | 5 | 10 |
| Emergency response plan | 0 | 3 |

Table 4.1.4.1 shows that when the audit was carried out for the first time in 2005, 3 workplaces had a written safety and health policy but by 2008, all the workplaces had written policies. With regard to assignment of responsibilities, while none of the workplaces had assigned somebody to be responsible for safety and health matters in the workplace, by 2008, 2 workplaces had done so. 6 workplaces had constituted

safety and health committees in 2005 but by 2008, all the workplaces had functional safety and health committees. In 2005, 2 workplaces were recording occupational accidents which improved to 9 by 2008 and while only 1 workplace was recording cases of ill health in 2005, a total of 5 workplaces were recording cases of ill health by 2008. None of the workplaces was subjecting their employees to medical examination as per the requirements of Factories and other Places of work (Medical Examination) rules in 2005 but in 2008, medical examination were being carried out in 4 of the workplaces. Similarly, while none of the workplaces was prominently displaying operational procedures for machinery and equipment in 2005, 2 workplaces were displaying the procedures in 2008. In 2005, 9 workplaces were providing suitable personal protective equipment and clothing but by 2008, all the 10 workplaces were providing the equipment and clothing.

Unobstructed and marked fire exits were provided in 5 workplaces in 2005 and in 2008, all the 10 workplaces had unobstructed and marked fire exits.

In 2005, none of the workplaces had an emergency response plan but by 2008, 3 had an emergency response plan in place.

### 4.1.5 Factors affecting implementation of recommendations contained in audit reports for selected workplaces within Nairobi Metropolis.

The last objective of this study was to determine factors affecting implementation of recommendations contained in audit reports for selected workplaces within Nairobi Metropolis.

To determine this, the employers or their representatives were asked to indicate the reason or reasons for not implementing recommendations in the audit reports for

years 2005, 2006 and 2007 in the employers' questionnaire (appendix 1). The respondents were required to choose from among a given set of six reasons. However, in the event that the respondent had any other reason outside the given reasons, they were given an opportunity to state the reason. There was a 100% response and none of the workplaces gave a reason outside the given choices.

The employers' response for each of the years is given in figure 4.1.5.1.

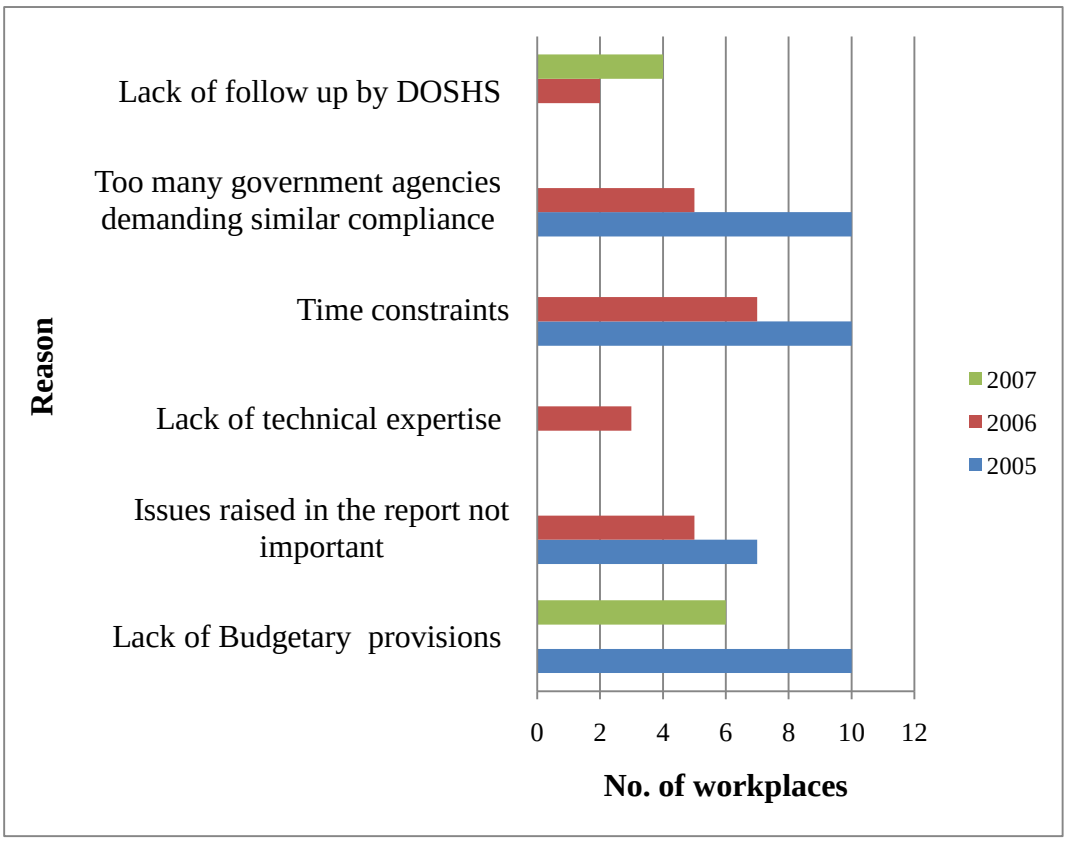


**Figure 4.1.5.1. Reasons for not implementing recommendations in the audit report.**

All the 10 workplaces gave lack of budgetary provision, time and too many government agencies demanding similar compliance as the reasons why they did not implement recommendations as per the 2005 audit report. 7 workplaces regarded the

issues raised in the report as not being important and none of the workplaces gave lack of technical expertise and lack of follow up by Directorate of Occupational Safety and Health Services as reasons for not implementing the recommendations.

In 2006, 7 workplaces did not implement recommendations in the audit report because of lack of time while 5 workplaces gave as reasons issues raised not being important and too many government agencies demanding similar compliance. 3 workplaces cited lack of expertise as a reason and 2 workplaces gave lack of follow up by DOSHS as a reason. None of the workplaces gave lack of budgetary provision as a reason for not implementing recommendations

Lack of budgetary provision as a reason for not implementing recommendations contained in the 2007 audit report was given by 6 workplaces and lack of follow up by DOSHS was given as a reason by 4 workplaces. None of the workplaces gave issues raised as not being important, lack of technical expertise, lack of time and too many government agencies requiring similar compliance as reasons for not implementing recommendations.

**4.2. Discussions.**

**4.2.1 Number of workplaces audited since 2005.**

The Factories and other places of work (safety and health committees) rules, 2004 requires that workplaces that regularly employ twenty or more employees do undertake safety and health audits once every year. Table 4.1.1 showed that in 2005, one year after the commencement of these rules, 315 workplaces were audited. This number increased steadily in the subsequent years to 370 in 2006, 433 in 2007 and

632 in 2008.The steady rise in figures showed that the rate of compliance with this requirement was increasing with time and within a period of four years (2008), the number of audited workplaces had increased by 100.6 %.

However, of the 315 workplaces that were audited in 2005, it is only 42 workplaces representing 13.33 % that carried out repeat audits the following year (2006) despite an increase in the number of audited workplaces. Similarly in 2007, only 89 workplaces of the 370 that had been audited in the previous year (2006) representing 24.05% had a repeat audit and in 2008, of the 433 that had been audited the previous year (2007), only 181 representing 41.8% had a repeat audit. This showed that a majority of the workplaces failed to carry out a repeat audit in the following year and hence did not comply with the legal requirement. Following up on the number of workplaces that were audited every year from 2005 up to 2008, the inconsistency in auditing became more glaring as only 20 workplaces were audited out of the initial 315 workplaces, representing 6.35%.

The steady increase in the number of workplaces that underwent auditing from 2005 to 2008 coupled with the decline in the dropout rate which was highest in 2006 at 86.67 % but which declined to 75.95 % in 2007 and further to 58.2 % in 2008, indicated that employers had built a goodwill towards auditing and had come to appreciate that audits were necessary as reflected in the employers' response to the question "Are safety and health audits necessary?" where 70% of employers answered yes with only 30% saying they are not necessary (Table 4.1.3.2.4).

It is necessary for DOSHS to build on this goodwill as auditing identifies areas that need both preventive and corrective action for continuous improvement of OSH

performance in the workplace according to the ILO guidelines on Occupational Safety and Health Management Systems (2001). Further, a safe and healthy workplace is more productive and makes good business sense (Reese, 2003).

### 4.2.2 Trend of accidents and cases of ill health.

Reporting and compiling accident and ill health data helps to provide knowledge for use in the prevention of occupational injuries, fatalities and other forms of harm, prioritizing preventive measures and evaluating their effectiveness, monitoring risks, conducting awareness campaigns and providing feedback for those involved in prevention (Croner Publications, 1996). Reese (2003) argues that gathering and analysing accident and ill health data are important elements for providing feedback and evaluative information with a view to accomplishing a company's safety and health goals. The trend of accidents and cases of ill health serves as an indicator of the performance of occupational safety and health in a workplace. Fewer accidents and cases of ill health may imply better performance while an increase may imply the reverse.

The number of workplaces recording accidents in conformity with the code of practice on occupational safety and health auditing increased from 2 in 2005 to 9 in 2008 (Table 4.1.4.1.) an increase of 70%. The managements of the various workplaces had also made it a requirement that workers should be reporting all injuries regardless of severity (Table 4.1.3.1.10). This ensured that no accident went unreported and therefore unrecorded, leading to better capture of accident data.

The high increase of both fatal and non fatal accidents for all the workplaces from 2004 to 2006 (Figures 4.1.2.1 and 4.1.2.2) can therefore be attributed to both

improved recording of occupational accidents in the workplaces and poor performance of safety. However, despite improved recording of accidents, there was a decline in the number of accidents occurring from 2006 to 2008. The reduction in the number of accidents can be attributed to improved working conditions as the number of accidents occurring in a workplace can be a measure for performance of occupational safety and health in that particular workplace (ILO OSH Guidelines, 2001).

Occurrence of fatal accidents in 2004, 2005 and 2006 reflects poor working conditions in the workplaces under study during that period. According to Bird (1974), for every one disabling injury which includes fatal accidents, there are ten minor injuries and six hundred near misses. No fatal accident was recorded in 2007 and 2008 which can imply improved working conditions. Recording of fatal accidents has been more accurate over the years as the records had to be kept for the purposes of compensation under the Work Injury Benefits Act, 2007 and its precursor, the Workmen Compensation Act.

With regard to cases of ill health, the trend showed a steady increase throughout (Figure 4.1.2.3). The steep rise from 2005 to 2006 was expected following introduction of the Factories and other places of work (medical examination) rules in 2005 which made it compulsory for workers exposed to specific hazards to undergo periodic medical examinations. This is evident from Table 4.1.4.1 which shows that none of the workplaces was carrying out medical examination of their employees in 2005 but by 2008, four workplaces had started recording. The steady increase of cases of ill health from 2004 to 2008 can also be attributed to an improvement of

recording. In 2005, only 1 workplace was properly recording cases of ill health in line with the code of practice for safety and health auditing which rose to 5 in 2008 (Table 4.1.4.1). This could however also mean that several cases went unreported in 2004 and 2005 thus rendering the recorded cases unrepresentative of the actual figures. Besides, none of the workplaces was subjecting its employees to periodic medical examinations in 2005 in accordance with the Factories and other places of work (medical examination) rules which however had changed by 2008 when 4 workplaces had started carrying out medical examination of the workers.

In this study, majority of the workers (63.1 %) had not heard of any complaints of ill health due to working conditions from colleagues (Table 4.1.3.1.6) and even when there were such complaints, they were not common (Table 4.1.3.1.7). Further, the latent or delay period between exposure to a hazardous agent and the development of manifestations of the disease process may run to many years after exposure before the condition becomes apparent and there are, therefore, an unknown number of cases which will occur in the future which may be linked to past exposures. Due to this and the short period that this study covered (2004 to 2008), the results for the trend of cases of ill health may not be conclusive to determine the improvement or otherwise of the working conditions.

### 4.2.3 Perception of the workers on the working conditions in their places of work.

Majority of the workers (85.4 %) had worked for more than one year in their respective workplaces (Figure 4.1.3.1.1) and they were therefore in a good position to evaluate the working conditions in their workplaces. Further, a majority of them (70.8 %) had undergone induction training on safety and health (Table 4.1.3.1.8)

which created awareness on various aspects of occupational safety and health including safe work procedures right from the time they started working in their respective workplaces. Indeed, almost all the workers were aware of the existence of a safety and health committee in their workplaces and its role (Tables 4.1.3.1.2 and 4.1.3.1.3). This shows that they had knowledge of safety and health and therefore their response to the questions was informed.

Their responses show that the workers believed the working conditions in their workplaces were safe and healthy. Indeed, from the responses, the workplaces were applying good practices in occupational safety and health.

According to ILO- OSH Guidelines (2001), competence and training should be part of an organization's OSH management system and Table 4.1.3.1.8 shows that most of the workers (70.8 %) had undergone induction training on safety and health. Workers need to know how to do their jobs safely and without risk to their health (OSHA, 2007).

Good order and good housekeeping not only reduce accident risks by eliminating physical risks but also contribute to safety by their psychological effect (ILO, 1978. Accident Prevention: A workers' Education Manual, page 54). 96.2% of the workers indicated that their employers required them to keep their work stations in a clean and orderly state (Table 4.1.3.1.13). Similarly, safe machinery and equipment can go a long way in reducing accident rates. According to DOSHS annual report of 2003, machinery and equipment caused majority (49.5%) of non fatal accidents in Kenya. It is therefore noteworthy that majority of the workers (79.2%) believed that the machines and equipment used in their workplaces were safe to use (Table 4.1.3.1.9**).**

The level of awareness on what to do in case of an emergency was high (75.4%) among the workers (Table 4.1.3.1.14) and all the workplaces had provided unobstructed and marked fire exits (Table 4.1.3.1.15). This is important as in the event of fire, workers would know how to respond including raising the alarm, being able to control the fire and if necessary evacuate the premises with ease.

Personal protective equipment and clothing serves as a barrier between the worker and the hazard thus protecting the worker from getting in to contact with the hazard. In this regard, 80.8% of the workers (Table 4.1.3.1.11) were in agreement that workers were being provided with the items which compares well with the audit findings that all the workplaces were providing suitable personal protective equipment and clothing (Table 4.1.4.1).

Pre-employment medical examinations are primarily used to provide a record of previous exposures and to establish a baseline of health for an employee including hyper susceptibility and not necessarily to determine employment eligibility (Todd 1984 cited in ILO Safe Work Book Shelf 2005). A good number of workers (62.3%) had been subjected to pre -employment medical examination (Table 4.1.3.1.12). Unfortunately, the researcher was not able to find out if the medical examination was for the purpose of determining eligibility for employment or not.

However, notwithstanding the positive perception that the workers had on the working conditions in their respective workplaces, the response to some of the questions by the workers indicated that all was not well and indeed called to question the managements' commitment to safety and health.

The study revealed that all the workplaces had written safety and health policies and functional safety and health committees. However, only a few of the workers (39.2%) were aware of the contents of the policies (Table 4.1.3.1.1). It is important that all workers should not only be aware of the existence of workplace safety and health policy and its contents but they should also be involved in its formulation. Involvement of workers helps to win their cooperation and hence contribute to the success of the workplace safety and health management system. The policy should be communicated within an organization and be readily accessible to all persons at the place of work (ILO- OSH Guidelines, 2001). Similarly, a safety and health representative, having been elected by the workers should always endeavour to involve them in the affairs of the committee as by so doing, the workers will be able to participate fully in matters of safety and health in the workplace. In this study, not all workers were consulted by their safety and health representative as only 56.9% indicated that they were consulted by their committee representative whenever the representative went for meetings (Table 4.1.3.1.4). Apparently the number of years an employee had worked did not have a bearing on their knowledge of existence of safety and health committees in their workplaces (Table 4.1.3.1.5).

### 4.2.4 Level of implementation of recommendations contained in safety and health audit reports.

The study also sought to verify the level of implementation of the recommendations made in the audit reports by safety and health advisers of the selected workplaces.

All the workplaces had made efforts, albeit with varying degrees of success, to implement recommendations made by safety and health advisers made in successive audit reports. All the workplaces had in place a written safety and health policy and a

functional safety and health committee. They had also provided employees with personal protective clothing and equipment and their premises had accessible and marked fire exits.

This represents successful implementation of only four out of a total of the ten issues that had been brought to the attention of the various managements by safety and health advisers. However, considering that four years had elapsed since 2005 when these issues were first documented in the audit reports, this is not good enough. Incidentally, with all the workplaces having a written safety and health policy, implementing the recommendations should not have been difficult as the policy should ordinarily stipulate appointment of a person or persons at senior management level for development and implementation of an OSH management system in a workplace and establishment of structures to ensure that OSH is the responsibility of the line management. The policy should also address arrangements for identifying potential for accidents and emergency situations and coming up with preventive measures including emergency preparedness and response. Apparently, the most difficult recommendations to implement were assignment of responsibility for safety and health in writing to specific individuals and displaying prominently operational procedures for machinery and equipment followed by availability of an emergency response plan (Table 4.1.4.1).

Even though all the workplaces had safety and health committees in place by 2008, most of these committees did not adhere to the requirements of the Factories and other places of work (safety and health committee) rules.

Four (4) workplaces representing 40% (Table 4.1.3.2.1) did not meet the minimum number of times the committee is required to meet as the rules stipulate that the committees should meet not less than four times in every year and not more than three months should elapse between the date of one meeting and the date of the next meeting. One workplace, representing 10%, did not have minutes of the committee meetings (Table 4.1.3.2.2) which made follow up of deliberations of the committee very difficult if not impossible.

There was minimal interaction between the advisers and safety and health committees which showed lack of compliance by the advisers of Safety and Health Committee rules. The rules stipulate that the adviser should advise both the management and members of the committee on matters relating to occupational safety and health arising from the audit report. Out of the ten workplaces under study, only three workplaces, representing 30%, did the advisers discuss the audit findings with the committees (Table 4.1.3.2.3). This omission calls to question the impartiality and independence that is expected of advisers when performing their duties.

### 4.2.5 Factors affecting implementation of recommendations contained in audit reports.

All the workplaces under study gave lack of budgetary provision, time and demand of similar compliance by many government agencies as the reasons for failure to implement recommendations in the audit reports for 2005 (Figure 4.1.5.1). These reasons reveal that safety and health issues were not a priority in the earlier years of safety and health auditing.

Adequate resources in form of finances and personnel with the necessary skills were lacking and therefore whatever recommendation that may have required finances could not be implemented. Similarly, none of the workplaces had placed a specific individual to be responsible for safety and health issues in the workplace (Table 4.1.4.1) and whoever was expected to follow up had other core duties and hence could not get time to attend to the issues.

With regard to many government agencies requiring similar compliance, this view can be attributed to ignorance on the part of managements of the workplaces as the different agencies play different roles. When safety and health audits were introduced in 2004, both Public Health Act which is administered by Ministry of Public Health and Local Authorities and the Environment Management and Coordination Act, administered by NEMA, were already in place and both had some provisions touching on safety and health. So at the first audit, most employers could not readily differentiate the different roles the various agencies including DOSHS were playing and were of the view that there was a duplication of roles. Indeed three of the workplaces under study classified under food industry (Figure 4.1) were carrying out medical examination of their workers under Public Health Act in 2005 and not under Factories and other places of work (medical examination) rules, 2005. Similarly, the Environmental (Impact Assessment and Audit) regulations, 2003 require that environmental audits should include an examination of health and safety issues including seeking views of employees of the facility being audited. It is therefore not surprising that all the workplaces were of the view that there were too many government agencies demanding similar compliance.

With 70% of the workplaces being of the view that issues raised in the reports were not important to warrant implementation in 2005 (Figure 4.1.5.1), it is an indication that most workplaces did not recognise workplace safety and health as an integral part of an organization's business at that time. Safety should be viewed as an added value to an organization's business development as opposed to something that must be done or accomplished and should be integrated into day to day management of the organization just like production, quality control and marketing (Health and Safety Authority, 2007).

In 2006, time constraint featured prominently as a reason for not implementing recommendations with 70% of the workplaces giving it as a reason which was an improvement over the previous year as at least 30% of the workplaces did not give it as a reason. The most significant change was noted in the area of "too many government agencies demanding similar compliance" where only 50% of the workplaces were of this view compared to the previous year where all the workplaces thought so implying that employers had started realizing the different roles of the various government agencies. Similarly, the number of workplaces giving "issues raised not being important" as a reason reduced from 70% to 50% showing that employers had started treating issues concerning safety and health more seriously. A factor that is unique to 2006 is "lack of technical expertise" with 30% of the workplaces giving it as a reason for not implementing the recommendations which does not feature either in 2005 or 2007.

This would mean that the employers had started appreciating that occupational safety and health was a technical area that requires training, experience and knowledge to

be able to manage effectively safety and health risks in their workplaces. This view is reinforced by 20% of the workplaces being of the view that follow up by occupational safety and health officers would have assisted in having the recommendations implemented as a part from enforcement of the law, the officers are also required to offer advice.

Lack of budgetary provision (60%) and lack of follow up by occupational safety and health officers (40%) were the only two reasons given for failure to implement recommendations in 2007. This indicates that after three years, employers had started appreciating the role of occupational safety and health officers and more so that their advice and expertise is necessary for effective implementation of recommendations and some had started allocating a budget (40%) towards safety and health.

Generally, looking at the three years, the trend is encouraging. The reasons given for failure to carry out implementation in 2005 reflect lack of commitment and lack of awareness on occupational safety and health by managements of the workplaces under study. This improved in 2006 as the number of workplaces giving the same reasons declined and were appreciating that safety and health required technical expertise and by 2007, employers were taking seriously recommendations contained in safety and health audit reports the only major impediment being lack of finances.

This calls for commitment on the part of employers and senior management as this is the only way to ensure that adequate resources, both human and financial, are allocated towards safety and health in workplaces.

# CHAPTER FIVE

## 5.0 CONCLUSION AND RECOMMENDATIONS.

### 5.1 Conclusion.

The study found that the working conditions in the workplaces within Nairobi Metropolis have improved since safety and health audits were introduced in Kenya and has therefore proved the alternate hypothesis.

However, the study revealed that safety and health auditing has taken time to pick up despite it being a legal requirement since 2004 vide Factories and other places of work (Safety and Health Committee) Rules, 2004. This requirement was retained and even extended to apply to all workplaces in 2007 by Occupational safety and Health Act.

The study established that there was improvement of recording of accidents and cases of ill health. Accurate records of accidents are important as their trends can be used to determine improvement or otherwise of safety and health conditions in a workplace.

Workers' perception on the working conditions was positive and the workplaces were applying good practices in occupational safety and health. However, workers' involvement in safety and health matters in the workplaces was not encouraging as a majority of them were not aware of the contents of safety and health policies of their workplaces and a substantial number of them were not involved in the affairs of safety and health committees in their places of work.

The implementation level of the recommendations contained in the audit reports was not good enough considering the time it had taken (2005 to 2008) to comply and shows lack of commitment by employers and managements of the various workplaces. There is a definite need for safety and health advisers to play their role effectively so as to promote safety and health culture in Kenyan workplaces.

**5.2 Recommendations.**

The researcher recommends that DOSHS should be more aggressive in its enforcement role and ensure that all workplaces undergo auditing on an annual basis as required by the law. It should also ensure that the recommendations made in the audit reports are addressed expeditiously with a view to improving the working conditions in Kenya. In line with this, the Code of Practice on auditing should be reviewed to include an action plan where by a time line and a budget should be indicated against each recommendation. This will ensure timely implementation of the recommendations contained in the audit reports. It is also recommended that a control audit be introduced by DOSHS, being the regulating authority, for the purpose of verifying the findings of safety and health advisers as captured in their audit reports as well as the accuracy and quality of their audit reports. Currently, there is no mechanism of verifying the findings of safety and health advisers.

The researcher recommends a further study to find out why there is marginal commitment towards safety and health issues by employers in Kenya and the extent to which safety and health advisors have promoted a safety and health culture in Kenya.

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# APPENDICES

## Appendix 1: Questionnaire to Employees.

### INFORMED CONSENT

Hello.

My name is **Stanley Mwangi Mbatha,** a student at the Jomo Kenyatta University of Agriculture and Technology and an employee of the Ministry of Labour, Directorate of Occupational Safety and Health. I am conducting a health and safety survey in fulfilment of a Master's degree and would very much appreciate your participation in this survey.

I would like to ask you some questions regarding health and safety issues in your firm. This information is for academic purposes but will also assist the department of occupational safety and health services to evaluate safety and health auditing in Kenya

Whatever information you provide will be treated in strict confidence and will not be shown to other individuals or your employer. Participation in this survey is voluntary and you can choose not to answer any question or all the questions. However, I hope that you will participate in this survey since your views are important.

At this juncture, do you want to ask me anything about the survey?

May I begin the interview now?

1. Name (Optional)……

2. Department/Section……

3. Duration of employment in the firm (years) ……

*Please answer the following questions by ticking:*

4. The contents of Safety and Health Policy have been explained to me quite well

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

5. I am aware we have a safety and health committee.

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

6. The role of safety and health committee is well known to me

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

7. Our safety representative consults us every time they go for a meeting

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

8. Have you ever witnessed an accident in the workplace? Yes.....No.....

9. Have you ever heard somebody complain of ill health due to the working conditions? Yes..... No.....

10. If (9) above is yes, is this complaint common in the workplace? Yes.....No.....

11. Everybody is explained about safe work procedures immediately one is employed

- Strongly agree

- Agree
- Not sure
- Disagree
- Strongly disagree

12. The machines and equipment we use in the firm are all safe to use

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

13. All injuries regardless of how minor must be reported to the management

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

14. Everybody in the firm is provided with protective clothing and equipment.

- Strongly agree

- Agree
- Not sure
- Disagree
- Strongly disagree

15. I was subjected to a medical examination before being employed in this firm.

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

16. We always keep our work station clean and orderly

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

17. Everybody is aware of what to do in the event of fire or any other emergency

- Strongly agree

- Agree
- Not sure
- Disagree
- Strongly disagree

18. All fire exits are kept free from obstruction always

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

**Appendix 2: Questionnaire to Employer/ Employer's representatives**

**INFORMED CONSENT**

Hello.

My name is **Stanley Mwangi Mbatha** a student at the Jomo Kenyatta University of Agriculture and Technology and an employee of the Ministry of Labour, Directorate of Occupational Safety and Health. I am conducting a health and safety survey in fulfilment of a Master's degree and would very much appreciate your participation in this survey.

I would like to ask you some questions regarding safety and health issues in your firm. This information is for academic purposes but will also assist the department of occupational safety and health services to evaluate safety and health auditing in Kenya. Whatever information you provide will be treated in strict confidence and will not be shown to other firms. Participation in this survey is voluntary and you can choose not to answer any question or all the questions. However, I hope that you will participate in this survey since your views are important.

At this juncture, would you wish to ask me anything about the survey?

May I begin the interview now?

Name of Company…….

Number of employees……..

Name of respondent (optional)……

Designation……

1. Is there a written safety and health policy in your company? Yes/ No…….
2. Do you have a person in charge of safety and health in your company? Yes/No.

   If yes, what is the title? ……
3. Is there a safety and health committee in your firm? Yes/ No……..
4. If (3) above is yes, how many times did the committee meet in 2008?.....
5. Are there minutes for the committee meeting? Yes/ No……
6. Have you had cases of accidents in your firm? Yes/ No……
7. Have you ever heard workers in your firm complaining of illness as a result of working environment? Yes /No.....
8. Are incidences of accidents and ill health recorded? Yes /No……..
9. Do your workers undergo Medical examination? Yes/No……

If yes tick as appropriate:

a) Pre-employment ……

b) Periodical……..

*c)* Any other

(Specify)……

*10.* Please give the total number of accidents and cases of ill health recorded for the following years:

| *Year* | *Accidents* | | *Ill health* |
|---|---|---|---|
| | Fatal | Non fatal | |
| 2004 | | | |
| 2005 | | | |
| 2006 | | | |
| 2007 | | | |
| 2008 | | | |

11. Has there been an opportunity for the safety and health adviser to discuss the audit findings with the safety and health committee for 2007? Yes/No…..

12. In your view, are safety and health audits necessary? Yes /No……..

13. What were the reasons for not implementing recommendations contained in the Safety and Health audit report for each of the following years?

*2007:*

a) Lack of Budget

provisions……..

b) Issues raised in the report not important……..

c) Lack of technical expertise…….

d) Time constraints……

e) Too many government agencies demanding similar compliance……

f) Lack of follow up by DOHSS officers……

g) Any other (please specify)……

*2006:*

a) Lack of Budget provisions……..

b) Issues raised in the report not important……..

c) Lack of technical expertise……

d) Time constraints…….

e) Too many government agencies demanding similar compliance…….....

f) Lack of follow up by DOHSS officers……

g) Any other (please specify)…….

*2005:*

a) Lack of Budget provisions……

b) Issues raised in the report not important……

c) Lack of technical expertise……..

d) Time constraints……..

e) Too many government agencies demanding similar compliance…….....

f) Lack of follow up by DOHSS officers……

g) Any other (please specify) ……