

**EFFECTS OF OCCUPATIONAL HEALTH AND SAFETY PRACTICES ON
EMPLOYEES' PRODUCTIVITY IN MUMIAS SUGAR COMPANY, KENYA**

BY

MIRIAM JELIMO SAWE

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DECLARATION

Declaration by the Candidate

This research is my original work and has not been presented for a degree in any other University. As may be confirmed from Moi University School of post graduates studies of Human resource development.

.....

Miriam J. Sawe

Reg. No. SHRD/PGH/34/09

.....

Date

Declaration by the Supervisors

This thesis has been submitted for examination with our approval as University Supervisors.

.....

Prof. Leonard S. Mulongo

Department of Development Studies

School of Human Resource Development

.....

Date

.....

Dr. Benard K. Nassiuma

Department of Entrepreneurship

School of Human Resource Development

.....

Date

DEDICATION

I dedicate this work to my husband Joseph Keter who is my inspiration and I thank God for him. To my parents Mr and Mrs. Sawe who kept on monitoring my progress. Also I dedicate it to my children Mercy, Daisy, Joy and Maxwell who always put a smile on my face. Thank you for motivating me to be a hard working mother.

ACKNOWLEDGMENT

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ABSTRACT

A healthy and safe workforce is an essential component for any business to run successfully. This is evident in the enormous interest by organizations in the activities related to Occupational Health and Safety practices and organizations have used this as part of enhancing employee productivity. Organizations tend to concentrate on factors or variables which enhance productivity and sometimes ignore Occupational Health and Safety practices and take it as a side issue. As much as other variables contribute substantially to employee productivity there is need to integrate Occupational Health and Safety practices as one of the parameters that contribute to employee productivity. The objectives of this study were to: identify Occupational Health Safety activities in the organization, determine effects of Occupational Health and Safety on employee productivity, ascertain challenges faced in implementing occupational health and safety practices and explore appropriate techniques of implementing Occupational Health and Safety practices. This study was based on Maslows hierarchy of needs theory. The researcher sought to examine one organization in the sugar industry in detail and therefore adopted a case study design. The target population of the study was 1603 employees in Mumias Sugar Company Limited. Stratified and purposive sampling technique were used to sample 185 respondents, which include; top management, middle level management, supervisors and sub-ordinate. In addition simple random sampling was applied in selecting representative sample of the middle level management, supervisors and subordinates. Observation, Questionnaires and interviews were the instruments used to collect data. The data was analyzed using descriptive and inferential statistics and the results presented using tables, charts and graphs. The Multiple Regression showed that the $R^2 = .812$ indicated that all the occupational health and safety practices in the model account for 81.2% variation in the employee productivity in Mumias Sugar Company. The Occupational Health and Safety practices which had positive relationship with productivity of employees include; fire prevention and protection, lighting and ventilation, personal protective equipments and good house keeping, while chairs/tables and facilities for sitting, first aid kit and medical facility and drinking water and sanitary facilities had negative relationship. The study concludes that when an organization fully implements occupational health and safety practices employees' productivity improves. It was also realized that absence of Occupational Health and Safety practices could easily result in absenteeism, high employee turnover, increased medical bill and insurance claim, injuries and frequent accidents. The study recommends continuous improvements of occupational health and safety practices as it greatly influences employee satisfaction, commitment, performance and productivity.

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ACRONYMS

AIDS	Acquired Immuno- deficiency Syndrome
DOHSS	Director of Occupational Safety and Health Services
HIV	Human Immuno-deficiency Virus
HRT	High Risk Task
HSE	Health and Safety Council
HSE	Health and Safety Executive
ILO	International Labor Organization
ILO	International Labor Organization
ISO	International Organization for Standardizations
OHS	Occupational Health and Safety
OHS-MS	Occupational Health and Safety Management systems
PPE	Personal Protection Equipment
QMS	Quality Management Systems
UNDP	United Nations Development Program
WHO	World Health Organization.

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter provides the background of the study, the statement of the problem which led to the quest of this research and the objectives, the significance of this study and the scope and limitations. It also discusses the key issues that form the foundation of the study.

1.1 Background to the Study

The interdependence between working conditions and productivity is increasingly recognized all over the world (Amazon 2008). The provision of any health program will vary according to the location and size of the organization, the kind of work performed whether employees include women as well as men and their proportion in various age brackets. Health and safety go hand in hand safety is the protection of employees from injuries due to work related accidents. These accidents are unplanned and controlled events which can result in damage-both human and property. Occupational health aims at promoting and maintaining highest degree of physical, mental and social well-being of workers in all occupations; the prevention amongst workers of departures from health caused by their working conditions. Productivity is demonstrated by employees who enjoy good health and safety working environment. Productivity is used to asses or measures the extent to which a certain output can be extracted from a given input.

In Britain in 1995/1996 more than one million employees suffered an accident causing more than three days absence from work. This represents an enormous waste of human resources as well human suffering. The cost of accidents and work-related illness to British employers has been estimated to \$2.5 billions that year (Cole, 2002). The cost of accidents is an unwelcome addition to production costs and employers have to seek ways of avoiding this additional burden. Holt and Andrews (1993) recommend that it is necessary to deliver the message that health and safety of employees is important by giving messages of unpleasant consequences of actions and to advise staff on importance of health safety in the workplace basing on organization's health and safety policies and procedures.

In the United States, an agency (Occupational Health and Safety Administration) was created within the department of labor to set safety and health standards for all workers. This ensures that every employer provides employees a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees. In 2000 in the United States, there were over 4.7 million non-fatal injuries and illnesses resulting from accidents at work place per year (Dessler, 2005).

Muchemedzi and Charamba (2006) explain that accidents do not arise from a single cause but from a combination of factors which act simultaneously. A potentially unsafe situation does not cause an accident until someone is exposed to it. Accidents are caused by the result of unsafe acts or practices (the human element that results from poor attitudes, physical conditions and lack of knowledge or skills to enable one

to work safely). They are also caused by the result of unsafe conditions of equipment or materials.

Koopman (2001) states that accidents bring pain and suffering to the worker and his family. When it results in permanent disability, the consequences are disastrous for both the victim and the company. The victim loses his earning capacity and ability to enjoy a normal active life, and the society and company are deprived of his/her skill and contribution to production.

The 1969 Frank Bird Accident Ratio study on causes of accidents found out that 88% of accidents are caused by unsafe acts of persons, 10% are caused by unsafe mechanical or physical conditions and the remaining 2% are unpreventable. Muchemedzi and Charamba (2006) analysed the above statistics and established that the majority of accidents (98%) do not just happen. Instead, people who perform unsafe acts and create unsafe conditions cause them and therefore accidents are preventable. A local National Social Security Association (NSSA) bulletin established that most food factories do not abide by set OHS regulations. Most accidents are so minor that they have no visible injury or damage. Taking care of these minor problems results in a reduction or elimination of the major ones.

In Kenya, the health and safety situation in some organizations have been less satisfactory as compared to the international firms. The country has faced some of the worst fire tragedies in history. Under the labour laws, Occupational Safety and Health Act, 2007 has been enacted in Kenya. This is an Act of parliament to provide for the safety, health and welfare of workers and all persons lawfully present at work; and

protect persons other than persons at work against risks to safety and health arising out of or in connection with, the activities of persons at work. The law states that it is the duty of employees to report any dangerous situation to the supervisor. In the event of any contravention in connection with or in relation to a workplace of the provision of this Act be quilt of an offence (GOK, 2007).

Occupational health and safety risks that must be considered by the employer arise from normal functions and operations and during unusual circumstances such as accidents and incidents. The employer is responsible for implementing appropriate national and internationally recognized OHS standards, codes and guidelines. Maximum effectiveness of OHS systems requires the inclusion and meaningful participation of employees in implementation and maintenance of procedures and processes. To achieve meaningful and effective participation, the employer may have to implement a program to change employee culture and attitudes regarding health and safety.

The first move in this direction are when people began to realize that occupational health and safety had economic as well as physical consequences although the first only direct costs of medical care and compensation were perceived subsequently, attention was paid to occupational diseases as well. The most effective way is to obtain good results in the prevention of the occupational hazards include to recognize the importance of the employers responsibilities for ensuring that work place is safe and without risk to workers' health, to adopt an exceptional safety and healthy practices that provide for the establishment of good occupational safety and health organization within the enterprise and to encourage strong participation of workers in

safety and health practices at the work place include safety committees, inspection and accident investigation and the appointment of specialists. Occupational health and safety practices is a science of designing, implementing and evaluating comprehensive health and safety programs that maintain and enhance employee health, improve safety and increase productivity,(FOH,2007).

Occupational health and safety is a cross-disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment. The goal of all occupational health and safety programs is to foster a safe work environment. As a secondary effect, it may also protect co-workers, family members, employers, customers, suppliers, nearby communities, and other members of the public who are impacted by the workplace environment. It may involve interactions among many subject areas, including occupational (or industrial) hygiene, public health, safety engineering, health physics, environmental health, industrial relations, public policy, industrial sociology, occupational diseases, social law, labour law and occupational health psychology (Amazon, 2006).

Healthy and safety practices are concerned with protecting employees and other people affected by what the company produces and does against the hazards arising from the employment or their links with the company. Occupational health practices deal with the prevention of ill health arising from working conditions. This consists of occupational medicine which is concerned with diagnosis and prevention of health hazards at work and occupational hygiene which is the province of the chemist and the engineer or agro- chemist engaged in the measurement and control of environmental hazards. (Armstrong 2008).

Organizations have both the legal and moral obligations to provide health and safety working environments as well as ensuring the total well being of their employees. Organizations should be concerned with the employees' general health, both physical and mental for both economic and humanitarian reasons. Employees are the most important resources any organization can have. The employees total well being is not only important to themselves but equally so to the employer.

Organizations are currently operating in a complex and competitive business environment hence the need for an efficient and effective work force. Healthy workforce is one of the most indispensable assets in an organization. Ideally appropriate measures to ensure their wellbeing should be observed. This always calls for health and safety awareness among employers and employees to enable the organization to achieve the set objective. This is quite evident in most government policies requirements. However the concept occupational health and safety practice seems to be only valid in most organizational policy statements while none exists in practice.

1.2 Statement of the Problem

One of the biggest problems in the world today is the amount of pain, misery, injury and death caused by occupational accidents and diseases. The health and safety of today's workforce is vital part of every business' strategy. Employee safety and health programmes occupy a pivotal position in Human Resource Management. At some factories, attention is mainly on negative outcomes as long as there are no serious accidents, occupational health and safety policies and practices are not carried out fully.

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1.3 Objectives of the Study

The objectives of the study were:

1. To identify the occupational health and safety activities in the organization.
2. To determine how occupational health and safety practices influence employee productivity.
3. To ascertain the challenges faced in the implementing of occupational health and safety practices.
4. To explore appropriate techniques of implementing occupational health and safety practices in the organization.

1.4 Research Questions

The study was guided by the following research questions.

1. How is the occupational health and safety being practiced in the organization?
2. What are the challenges of implementing occupational health and safety practices?
3. Of what value is occupational health and safety on employee productivity?

1.5 Significance of the Study

The world has turned into a global village and has attracted liberalization leading to competitiveness in all the industries. This has led organizations to strive hard to be productive enough. It is therefore hoped that this study will yield data and information that will be useful in managing employees' occupational health and safety. The study will also be useful in modern management process which is faced with the problem of balancing individual's and organizational expectations. The findings of the study will also be expected to contribute towards the establishment of effective occupational health and safety practices at work place to enable employee comply with the rapid change brought in technology and enhance their productivity. The study will also help the organizations overcome the common perception that the occupational health and safety practices is a compliance of employee welfare issue and use the initiative in this area to add value to the organization. The findings may also assist employees to discover their responsibilities of adhering to health and safety rules and regulations. Organizations will also recognize that occupational health and safety of employees influence level of productivity. Based on the data that was collected and information analyzed and interpreted as well as conclusions and recommendations, the study will

also form a basis for further researches. This will contribute significantly to the world of management through generation of new knowledge.

1.6 Scope of the Study

The study was carried out to investigate occupational health and safety practices in employee productivity in Mumias Sugar Company. This was achieved through identifying the occupational health and safety activities, determining how occupational health and safety practices influence employee productivity and ascertain the challenges faced in the implementing of occupational health and safety practices as well as explore appropriate techniques of implementing occupational health and safety practices in the organization. The respondents in this study included top managers, middle level managers, supervisors and subordinate staff. Questionnaires and interview schedule was used to collect data.

1.7 Limitation of the study

This study suffered from several limitations that included, participants not being open or sincere in responding to the questionnaires, most of them answered questionnaires after asking the researcher several questions. The researcher had to use simple random sampling to acquire the required information. The participant's interaction was also hindered by other factors such as culture; fear of participant being victimized also hindered them from participating. Also a significant percentage of the participants did not respond implying reluctance to release any organizations information. To overcome these challenges, the researcher explained the objectives of the study, and assured them that information collected would be treated with great confidentiality.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter presents the literature review with respect to the study. It examines issues on occupational health and safety at work place and its impact on employee productivity. These also assisted the researcher to identify the research Gap. It also gives theoretical, empirical evidence and conceptual frame work of the study. The chapter ends with a summary by giving a critical view of the reviewed studies.

2.1 Empirical Evidence

2.1.1 Occupational Health and Safety activities currently in use in the organization Health and safety policies

Cole (2002) asserts that every employer is required to keep proper and up-to date written statement of safety policy. This statement reflects the employer's commitment to safety and health at work and should indicate what standards of behavior are to be aimed for in health and safety matters. The policy statement should be drawn to the attention of all employees. In practice this is achieved by issuing company handbooks which indicate details of the policy. However, a stated policy not drawn to the attention of all employees may have little impact in safeguarding employee's safety and health. The present study therefore sought to establish occupational health and safety practices in employee productivity.

Torrington *et.al.* (2008) states that a commitment policy ensures an organization supports and maintains a strong commitment to safety and health practices through:

- 1) Protection and maintaining safe and secure facilities for training research living and work.
- 2) Empowering organizations staff and customer to demonstrate individual and organizational leadership in all matters pertaining to safety and health protection which trying to achieve organizations goals.
- 3) Emphasizing upon communication with the organizations community regarding health and safety issues.
- 4) Minimizing hazards reducing pollution and continuously improving the environment.
- 5) Assuring compliance with the federal, state and local health safety requirements. Organization practices regarding health and safety protection.

It is the duty of every employer to prepare and revise a written statement of general policy with respect to health and safety of employees and arrangements should be made to carry out the policy and to bring the statement and any revision of it to the notice of all the employees (GoK, 2007). These policies provide guidelines on proper management of safety and health of employees and every organization should thrive to formulate such policies. One of the dilemmas facing all those who formulate policies is how to pursue business-led policies focusing on business success and fulfill obligations to employees in terms of quality of life and working conditions. Policies that are entirely business-led seem to imply that human considerations such as health and safety are unimportant and the present study assessed occupational health and safety in employee productivity.

Aswathappa, (2005) Legal reasons for safety of employees cannot be undermined. There are laws covering occupational health and safety, and penalties for non-compliance have become quite severe; the responsibility extended, to the safety and health of the surrounding community too. To a large extent, safety promotes productivity. Employees in safe plants can devote more time to improving the quality and quantity of their output and spend less time worrying about their safety and well-being. It can be concluded that both managers and employee thrive to maintain safety and health of employees at workplace and none wish to have accidents to occur.

Aswathappa (2005) asserts that the reason for establishing occupational health and safety practices at work place are; managers must undertake accident prevention measures to minimize the pain and suffering the injured worker and their family are exposed to as a result of the accident. The happiness of the family depends upon the health and safety of the worker who normally is the bread winner.

Health and safety training

Training according to Cole (2008) is any learning activity which is directed towards the acquisition of specific knowledge and skills for the purposes of a task. Examples of training needs are: the need to have efficiency in safety in the operation of particular machines or equipments; the need for an effective sales force: and the need for competent management in the organization. According to Armstrong (2006) Health and safety training is a key part of the preventative programme. It should start as part of the induction course. It should also take place following a transfer of employee to a new station or change in a working method. Health and safety training spells out the rules and provides information on potential hazards and how to avoid

them. Further refresher training should be provided and special courses laid on to deal with new aspects of health and safety or areas in which safety problems have emerged.

Dessler (2005) asserts that training is another way of reducing unsafe and un health acts, especially for new employees. They should be instructed in safe practices and procedures, warn them of potential hazards, and work on developing a safety-conscious attitude. OSHA has published booklets on training requirements and teaching safety in the work place.

Health and safety Audits and inspection

In Zimbabwe, there is a national regulation on the safety of factories (Amended Factories and Works Act Chapter 14:08) (1976). Inspections are carried out on factories, for instance on drains, pollution and any areas that are lacking in terms of the act. During an inspection, the inspector looks out for health hazards which the employer may or may not be aware of. The Factories and Works Act (1976) was amended to include the regulation that factories should renew their licenses annually. This is done to ensure that a working environment is safe. Some food factories are facing a risk with the health authorities due to dirty and degraded company environments, for example, the floors are dusty and the paint on some of the equipment is chipped.

According to Dessler (2005) conducting health and safety audits are not a substitute for eliminating hazards. Routine inspection for all premises for possible safety and health problems, using checklist as aids should be in place. Investigate all accidents

and near misses. Have a system in place for letting all employees notify all managers about hazards. Use employee safety committees to do the inspection. Committee activities include safety adequacy, monitoring safety audit findings, and suggesting strategies for improving health and safety performance.

According to Armstrong (2006) safety inspections are designed to examine a specific area of the organization –operational department or manufacturing process in order to locate and define any faults in the system, equipments, plant or machines or any operational errors that might be the source of accidents. Safety inspection must be carried out on regular basis by the line managers and supervisors with the advice and help of safety and health advisers.

Noe *et al* (2008) argues that OSHA inspections are conducted by specially trained agents of the Department of Labor called compliance officers. These inspections usually follow a tight script. Typically the inspection officer shows up unannounced. For obvious reasons OSHA's regulations prohibits advance notice of inspection and describes in a general way the procedures necessary to conduct the investigation. According to Luis *et al* (2007) OSHA has the power to conduct work place inspections to make sure that organization comply with OSHA standards. Because it could be impossible to conduct inspection of each of the thousands of affected workplaces each year, OSHA established an inspection priority system that calls for an inspections to be made in the following order' (1) situations that involving imminent danger in the work place.(2) incidents resulting in fatalities or hospitalization of five or more employees .(3) folly-up of employee complaint of unsafe or unhealthy working condition.(4) high hazard industries and occupations.

OHSA inspectors have the right to enter an establishment without notice to examine work environment⁶, Material and equipment and to question both employers and employees.

Safety awareness programs

Noe *et al* (2008) Stresses the fact that safety awareness programs go beyond compliance with OSHA and attempt to instill symbolic and substantive changes in the organization's emphasis on specific types of injuries or disabilities. A safety and health awareness programs have three components: identifying and communicating hazards, reinforcing safe practices, and promoting safety internationally.

To identify and communicate hazards' Employees, Supervisors and other knowledgeable sources need to sit and discuss potential problems related to health and safety. The job hazards analysis technique is one means of accomplishment, with this technique, each job is broken down into basic elements and each of this is rated for its potential for harm or injury. If there is consensus that some job elements has high hazard potential, these elements are isolated and potential technological or behavioral changes are considered.

To reinforce behavior the management has to implement a safety incentive program to reward workers for their support and commitment to health and safety goals. These programs are set up to focus on improving the short term goals or to encourage health and safety suggestions. These short term goals are expanded to include long term goals. The incentive includes merchandise which represent lasting symbol of

achievement. Good deals of evidence suggest that such programs are effective in reducing injuries and their cost.

To promote safety internationally, organizations also need to consider how to best ensure the safety of people regardless of the nation in which they operate. Cultural differences may make this more difficult than it seems. Armstrong (2006) suggested steps to increase effectiveness of safety messages; avoid negatives-successful safety propaganda should contain positive messages, not warnings of unpleasant consequences of action, exposure of message correctly- addressing the message to the right people at the point of danger, use of attention getting technique carefully-lured images may only be remembered for what they are, not for the message they are trying to convey, maximize compression- message should be simple, clear and specific, message must be believable-they should address real issues and be perceived as being delivered by people (i.e. Managers) who believe in what they say and are doing something about it, message must point the way to action-the most effective message call for positive actions that can be achieved by the receivers and will offer them a tangible benefit.

Dessler (2005) emphasizes those positive reinforcements as a way of communicating programs that are important in improving safety at work place. He says researchers introduced one program in a wholesale bakery. An analysis of the safety-related conditions existing in the plant before the study suggested a number of areas that needed improvement. For example, new hires received no training on safety but manager kept on communicating about health and safety verbally and pictorial these

impacted positively on employees. In addition managers kept on recognizing employee's efforts on safety. Safety in the plant subsequently improved markedly.

Luis *et al* (2007) suggested that managers should communicate safety rules and enforce them. OSHA obligates employees to adhere to safety rules, and in good programs managers' are willing to use the disciplinary system to penalize unsafe work behaviors. They use incentives, rewards and positive reinforcement to encourage safe behavior. They reward employee complaints or suggestions about safety.

2.1.2 The influence of occupational health and safety practices on employee productivity

Wilson & Rosenfeld (2004) asserted that integrated health, safety and productivity management programs are emerging as a business imperative aimed at improving the total value of human resource investments. These programs rely upon the joint management of human resources benefits and programs that employees may access when they are sick, injured or balancing work/life issues. They include health insurance, disability and workers' compensation, employee assistance, paid sick leave, and occupational safety programs. Wilson & Rosenfeld (2004) cited that also included are activities meant to enhance morale, reduce turnover, and increase on-the-job productivity. An integrated health, safety and productivity management model evolved over the past five to ten years. What led to its emergence? What prompted business leaders to actively pursue an integrated approach as a business imperative? Below we review some of the forces that supported a growing interest in, and adoption of, integrated health, safety and productivity management programs among American businesses.

An employee's safety and health practice influences all the activities including selection of employees, equipment and materials, the way work is done and designed and provide goods and services, (Managing Health and Safety Journal 2001). A written statement of any occupational Health and safety, and the organization, and arrangement should show arrangements for implementing and monitoring, it should also show the employees and anyone else. Those hazards have been identified and risks assessed, eliminated or controlled (Health Safety Journal 2001). The sort of events and incidents that cause injuries and illness can equally lead to property damage and interrupt production. So business organizations should aim at controlling all of accidental loss this can be done by identifying hazards and assessing risks.

Chabra (2005) emphasizes that occupational safety has an important influence particularly in hazardous industries. Safety measures prevent accidents which are disastrous to both employees as well as employers. Where these are provided, labor productivity is much higher in such units than in others where safety is lacking because employees perform fearlessly and with confidence when they are assured of safety precautions are taken they perform without tension and this raises the productivity of labor and boosts employee morale. Consistency in production in the short run results into upward trend in productivity into long run.

De Greef (2003) argues that OSH measures have important implications on company profitability by affecting revenue and production costs. These will result to decrease of the production costs (owing to fewer accidents, damages and less absenteeism etc) and increase in revenue (due to better productivity, efficiency, quality, effectiveness etc). These will translate to increase in revenue hence profitability. Goetzel (1999)

introduced a method called “Health productivity management” which aims at establishing links between today’s business climate, people, operational challenges and ultimately the productivity of an organization. His method will assist a great deal in the implementation of occupational health and safety in organizations so as to enhance employee productivity.

Zwetsloot *et al.*, (2004) noted that factors such as close cooperation, between the company’s management team and its employees giving staff greater autonomy and OSH translate into increased employee productivity. Other factors go along way with OHS in contributing to employee productivity. Lukkonen *et al* (1996) assessed the cost and benefits to organizations of stress prevention in the workplace and found that stress prevention presents a means whereby an organization cannot only reduce or contain the cost of employee health but also positively maintain and improve organizational health and productivity. The condition of the mind affects health to a far degree than many people realize. Many of the diseases from which employees suffer are the result of Grief, anxiety, discontent, remorse, guilt and distrust all tend to break down the life forces and to invite decay and death.

According to Dorman (2000) most organizations do not quantify the cost incurred as a result of poor working environment, ill-health and cost of accidents all these translate to loss of profitability to the organization poor productivity by employees. Dorman therefore argues that there is need to integrate occupational and safety with other variables so as to cut down cost and increase productivity level. There are as many different management occupational health and safety practices as there are business organizations. This is because organizations do not engage in the same activities. For

example the policy for the management of occupational health and safety at work place differ from one organization. The differences emerge from the different activities each of the organizations is engaged in. However when an organization considers to have its health and safety policy in place it must consider the following aspects according to *Managing Health and Safety Journal*,(2001); an effective policy should; be competent, easy to control and supervise and easy to communicate.

According to Webb (1989), a central belief in most of the occupational medicine/health promotion literature is that people perform better when they are physically and emotionally able to work and want to work which in turn leads to higher productivity. More substantial links between the implementation of health and safety programmes and their beneficial impact on a business's productivity and profits are emerging both directly (such as reduced sick pay and compensation claims) and indirectly (for example, reduced absenteeism, improved corporate reputation and reduced staff agitation).

Webb (1989) also studied a workstation change and found out an increase of 100% in productivity within less than three months. These changes are mechanical and physical, for example a change of postures to reduce physical strain of work and use of appropriate machinery for some tasks. Improving the fit between humans and tools inherently means a more effective match, good design permits more output with less human effort (MacLeod, 1995). Improving the quality of the workplace environment promotes productivity and food companies need to undertake OHS practices that achieve this.

A workstation change can increase productivity; however, it is misleading to conclude that this change results in the improvement of OHS standards. New machinery can also be hazardous to health. For instance, a noisy machine may be replaced by a new machine that is more efficient but produces dust. This shows a mere shift from one hazard to another. A workstation change can cause increased efficiency and productivity leading to an ignorance of the resultant OHS implications. It is therefore misleading to conclude that a workstation change improves OHS standards in light of the increased productivity.

Some workers experience back, neck, leg or arm pain discomfort. There is now a recognition that safer and healthier workplaces translate into increased productivity, more job satisfaction and stronger bottom-line results. There are four factors that explain the link between productivity and employees' overall health and safety (Brandt-Rauf et al., 2001):

1. The need for more innovative ways to reduce the high rates of workplace injury and illness.
2. The pressure to reduce the social and economic costs of injury and illness, particularly compensation costs.
3. The need to improve labour productivity without employees needing to work longer hours and/or taking on more work.
4. The need to offer good working conditions as an enticement to recruit and retain skilled workers in a tight labour market.

The current set up in most food factories is such that workers have to perform strenuous tasks and work longer hours in order to increase productivity. This may result in work related stress and muscular-skeletal disorders (Oxenburg et al., 2004). For instance, workers manually load long trucks using their shoulders, necks and heads. They also work longer than their normal eight hours up to twelve hours with a benefit of overtime money at the end of the month. Twelve hours are too long because of factory heavy work.

The Health and Safety Executive (2006) further explains that genuine productivity gains can be realized by those businesses that invest in high performance health and safety practices. However, the Health and Safety Executive (2006) also recognizes that there need to be a positive attitude by many organizations if they are to move on from simply attaining minimum legal compliance toward implementing the best practice of OHS. For those organizations that make the transition, the rewards are well worth the effort. In other words, when an organization is committed to OHS best practice and implements it in a properly managed manner, the result is a win-win situation that benefits both the workforce and the organization for which they work. There is need for a workplace improvement in terms of occupational health and safety for the benefit of the employer and the employee in order to increase productivity. Health to man has a unique genesis that commenced when man perceived imbalance in his system. Imbalance is experienced in the environment including the workplace. In a noble profession of public health, one will always experience opposition from those who preach preventive medicine outside while inside is filled with curative medicine. Thus it is quite evident that any individual employee productivity is always

a function of his/her well being. A healthy employee will not only be efficient and effective but also motivated to work and perform to the expectation.

2.1.3 How are Health, Safety and Productivity Related?

Armstrong (2006) further insisted that enlightened employers understand the various factors that comprise their total employment costs. They realize that their direct costs include wages paid to employees in the form of salary, bonuses, stock, savings plans, and commissions. They also understand that they pay for what is sometimes referred to as fringe benefits, which include health insurance, short- and long-term disability coverage, and workers' compensation.. A third component, often overlooked, consists of "other labor costs." This category of expense includes the "people" or "human capital" costs for programs that increase productivity and morale (e.g., training, health promotion, fitness facilities, picnics, fun events) and reimbursements to workers for lost time due to absenteeism. For example, the employer pays for unnecessary replacement worker wages, routine over-staffing or overtime premiums, and the largely intangible costs of dealing with morale issues, interpersonal problems, and sub-par productivity related to health problems.

As indicated by Certo (2008) over the past several years, literature has emerged demonstrating the relationship between poor health and employer costs. For example, a study by Goetzel et al. (1998) showed that employees who are depressed and highly stressed cost employers significantly more in health care costs compared to those without these psychosocial risk factors. Other studies have documented the relationship between poor health and productivity losses. Claxton et. al demonstrated that when workers are appropriately treated for depression, their absenteeism drops.

Cockburn et al (1999) documented differences in workers' productive output when treated for allergies with different types of antihistamines. Burton et al (2002) showed a direct relationship between modifiable health risk factors and work output for telephone call center operators at a bank. Several investigators have developed innovative methods to quantify these productivity losses and translate them into dollar terms, for specific health and disease categories or across multiple health conditions. These and other studies have set a framework for future research that examines the relationship between employee health, organizational productivity and work output.

According to Wilson & Rosenfeld (2004) when one couples individual health concerns with organizational stressors such as downsizing, lackluster senior management, poorly communicated policies, and an environment without clear purpose, the potential for productivity losses becomes even more pronounced. Negative organizational announcements and adverse business developments may occur within a larger socio-economic context and may further dampen worker enthusiasm and motivation to perform at peak productivity levels. Job and personal stresses, along with other job pressures, may manifest themselves as symptoms reflecting increased health, safety and productivity risks for the individual and organization. Such symptoms may present themselves as medical conditions such as chest and back pain, heart disease, gastrointestinal disorders, headaches, dizziness, weakness, repetitive motion injuries); psychological disorders (anxiety, aggression, irritability, apathy, boredom, depression, loneliness, fatigue, moodiness, insomnia); behavioral problems (accidents, drug/alcohol abuse, eating disorders, smoking); and organizational malaise (absence and tardiness, poor work relations, high turnover, low morale, job dissatisfaction, low productivity).

As implied by Kinick and Williams (2008) employers may be stymied in their response, not knowing where to place intervention emphasis and which departments or functions are responsible for such interventions. Senior managers may assume that the medical department handles medical problems, employee assistance handles psychological problems, labor relations handles behavior problems, and organizational development handles low morale problems. Given the fragmented nature of organizational structures, they may struggle to come up with a “given” solution to these varied problems, or they may introduce independent solutions that are divorced from other related and possibly complementary efforts.

Given the cacophony of individual, departmental, and functional approaches to solving common organizational problems, a need emerges for increased coordination and better implementation across disparate organizational structures. An integrated health, safety, and productivity management model establishes a new paradigm for working across departments to form a coordinated, synergistic and unidirectional set of solution packages. This approach is often necessitated by resource constraints and increasingly complex people management requirements. Consequently, individual department heads recognize that they can no longer afford to do their job in piecemeal fashion. The new paradigm forces managers to concentrate their efforts on improving the health and well-being of employees as a whole, not as individual cases, regardless of where the organizational benefit programs reside, (Kinick and Williams, 2008).

Those concerned with workplace illness and injury are also endeavoring to *quantify* how the overall health and safety of an employee affects their ability to work productively (Goetzel & Ozminkowski, 2000; Bunn, et. al. 2001; OEHF, 2004). More

precisely, the drive to link productivity with OHS outcomes is underpinned by four core reasons:

1. The need to find more innovative ways to reduce the high rates of workplace injury and illness than has previously been the case.
2. The pressure to reduce the social and economic costs of injury and illness, particularly compensation costs.
3. The need to improve labour productivity which does not result in employees working longer hours and taking on more work.
4. The need to provide good working conditions as a way of recruiting and retaining skilled workers in a tight labour market. This drive to link OHS and company productivity has in the past decade stimulated academic research where rigorous, empirical evidence had previously been slow to materialize.

O'Donnell's (2000) conceptual model of human performance exemplifies the linkages between health and safety, productivity and profits. Health and safety prevention and intervention programmes play a critical role in his model as these types of programmes can improve the physical and psychological well-being of the workforce which in turn reduces absenteeism and presenteeism. He also argues that such programmes improve the organisational climate, which enhances employees' desire to work and directly raises human performance. He asserts that improved organisational climate, morale, and employment relationships as well as higher profits have the potential to reduce the health and safety risks.

2.1.4 Benefits realized by implementing OHS practices in the organization

According to research done in UK by HSE (2004) it was revealed that organizations believed that improving health and safety of employees was integral risk management. Improvement of safety and health of employees and customers ploughs back to the organizations productivity in general. These benefits included a mix of both tangible and intangible benefits, such as maintain ace of brand and reputation, client's requirements, and staff morale, as well as health and safety.

OHS practices according to Liukkonen et al (1996), play a great role in reduction of cost for the organization the cost through the Work-related accidents or diseases which very costly and can have many serious direct and indirect effects on the lives of workers and their families. For workers some of the direct costs of an injury or illness are: the pain and suffering of the injury or illness; the loss of income; the possible loss of a job; health-care costs been estimated that the indirect costs of an accident or illness can be four to ten times greater than the direct costs, or even more. An occupational illness or accident can have so many indirect costs to workers that it is often difficult to measure them. One of the most obvious indirect costs is the human suffering caused to workers' families, which cannot be compensated with money.

Reduction of costs to employers on occupational accidents or illnesses is also estimated to be enormous and this is realized through the implementation of OHS practices. For a small business, the cost of even one accident can be a financial disaster. For employers, some of the direct costs are: been estimated that the indirect costs of an accident or illness can be four to ten times greater than the direct costs, or even more. An occupational illness or accident can have so many indirect costs to

workers that it is often difficult to measure them. One of the most obvious indirect costs is the human suffering caused to workers' families, which cannot be compensated with money, payment for work not performed, medical compensation payment, repair or replacement of damaged machinery and equipment, reduction of temporary halt in production, increased training expenses and administration, (Robbins 2003).

According to McCunney (2001), the primary beneficial impact of occupational health and safety on productivity is reduced absenteeism. McCunney demonstrates that the health risks and failure of employees to participate in fitness and health promotion programmes are associated with higher rates of employee absenteeism. There is need for much emphasis on the employer's participation in ensuring that OHS programmes and policies are existent. If these OHS practices are set, it is more likely that the worker participates in order to preserve his/her life. However, absenteeism may be encountered but may be completely neither unjustified on medical grounds nor attributable to unsafe conditions or hazardous events in the workplace.

It is difficult to demonstrate conclusively the extent to which business prosperity benefits from good health and safety or on the contrary, to say that prosperous businesses have good health and safety because they are able to afford it (Health and Safety Executive, 2006). However, based on available evidence, the Occupational Health and Safety Reports argue that there is clearly a vicious circle in that a healthy and happy workforce is more productive, leading to increased investment in health and safety to reduce accidents, which in turn leads to further productivity gains.

Effective workplace health and safety practices according to Robbins (2003) can help to save the lives of workers by reducing hazards and their consequences. Health and safety programmes also have positive effects on both worker morale and productivity, which are important benefits. As the Occupational health and safety encompasses the social, mental and physical well-being of workers in all occupations. Poor working conditions have the potential to affect a worker's health and safety. Unhealthy or unsafe working conditions can be found anywhere, whether the workplace is indoors or outdoors. Poor working conditions can affect the environment workers live in. This means that worker, their families, other people in the community, and the physical environment around the workplace, can all be at risk from exposure to workplace hazards. All these can be eliminated by the implementation of OHS practices in the organization.

Robbins (2003) asserted that as a result of OHS practices employers have resumed the moral and often legal responsibility to protect workers. These has therefore led to work environment being kept safe and healthy for people in the community and the workplace can no longer be at risk from exposure to work place hazards. This will go along way in reducing operational cost in the organization and add the organizations profitability, efficiency and effectiveness many interventions in occupational safety are implemented with the sincere hope that they will work, but with a lack of solid evidence of their effectiveness [and] can sometimes make the situation worse". They argue that before we can properly assess the impact of health and safety data or when the data is too costly to obtain, it is nonetheless based on the subjective reporting

How to evaluate the economic benefits?

One of the primary drivers for introducing OHS interventions is the resultant economic benefits. More specifically, there is recognition that *productivity drives economic growth and profits*. Better management of worker health and safety and related productivity outcomes may create a competitive business advantage (Sullivan 2004:S56). The literature also suggests that managers are more likely to make a decision to implement health and safety measures in order to increase productivity based on the knowledge that there are economic benefits (Dorman, 2000; Grozdanovic, 2001; Koningsveld, 2005).

However, Amador-Rodezno (2005) cautions, that it is not easy to convince employers of the economic benefits of OHS as typically they will underestimate the cost of the OHS problem while overestimating the costs associated with its remedy. Also establishing the cause-effect relation is not straightforward (William, et. al., 1997; Amador-Rodezno, 2005). This difficulty is complicated by the fact that in many instances several initiatives will be implemented at the same time (not only health and safety actions but also human resource actions), which makes it difficult to link a specific initiative to a specific outcome(s) (i.e. increased productivity = profits) (Bergstrom, 2005).

Nonetheless, there are a number of ways to estimate the cost of an OHS intervention. The two most prominent ones are: the insurance model and the cost benefit analysis model. The insurance model uses workers' compensation insurance information to provide an estimate of the costs of OHS interventions. Although this approach has the advantage of simplicity in that it is reliant on only one source of information, it is also

limited (Cutler & James, 1994). As Oxenburgh and Marlow (2005:210) note: "It does not measure, for example, productivity losses and employee turnover and thus may seriously underestimate the total costs of injury absence. The total injury costs it will likewise underestimate the potential savings from investment in avoidance of these costs. It will not provide an incentive for small organizations with no history of injuries to implement occupational health and safety improvements."

The cost benefit analysis model requires more data than the insurance model in that it measures all significant employment and production factors and therefore, it provides a more comprehensive picture. That is, it assesses the *total costs* of employment and the losses due to workplace injury or illness (Oxenburgh & Marlow, 2005). Because it is specific to the organisation, it is a better reflection of the actual economic benefits. According to Lahiri, et. al. (2005: 242) there are four elements within the framework:

1. The cost of the equipment and labour of the intervention enters the cost equation as a positive component; The degree of effectiveness of the interventions essentially determines the value of the avoidable costs of injuries and illnesses;
2. The increase in productivity results principally from the technological design of the equipment; and
3. The displacement of workers that might result from an increase in productivity of the intervention. Lahiri, et al. (2005: 242) continue:

"While both the second and third component enter the accounting equation as negative expressions and help to reduce the real cost of the intervention, the cost of retraining for displaced workers enters the equation as a positive cost from the societal point of view".

Oxenburgh & Marlow (2005:211) add that in order to determine whether or not there have been economic benefits as a result of an OHS intervention, it is necessary to gather data on the direct and indirect costs from a range of sources - namely:

- *Employee Data*: this includes the number of employees, their working time and wages, overtime, training and production costs;
- *Workplace Data*: this includes supervisory costs, recruitment, insurance, and other general overheads, maintenance, waste, and energy use; and
- *Intervention Data*: this relates to the costs associated with the intervention, for example, consultants' fees, disruptions and errors.

The data categories are intended to answer the question: "has optimal productivity been achieved?" If the answer is "no", then the next questions are asked: "why" and "what can be done?" Oxenburgh and Marlow (2005) suggest that there may be a number of reasons for a lower than optimum productivity, for example, an ill-conceived timeframe. Oxenburgh & Marlow (2005:3) also argue that it is important to ensure that productivity data is relevant to the OHS intervention and include both quantitative and qualitative data. They warn, however, that ascertaining the economic and productivity gains as a result of an OHS intervention can be difficult and necessitates resources being allocated. For small businesses, in particular, undertaking this exercise could be problematic as there may be a lack of resources and expertise as well as poor record keeping.

2.1.5 Challenges faced while implementing OHS practices in the organization

According to Dorman, (2000), it has become clear that the very nature of work has changed in the past few generations. Just about everything has changed as a result of a technological revolution that has swept over the developed world in the last quarter of a century. The changes have impacted our day today life and they have impacted our workplaces.

Perhaps, the biggest challenge of occupational health safety is simply keeping up with progress. One of the features of the modern technological age is rapid change. This rapid change presents two distinct problems to occupational health and safety programs. If a company is failing to provide the most up-to-date safety gear and following the most advanced standards for good health, they are failing in their mission to provide the best and safest work environment for their employees. Keeping up with rapid change is going to remain a challenge. The rapid change caused by technology is having a health impact on employees also. Most humans become stressed when exposed to constantly changing conditions, and this is becoming a major health concern. The proper training of employees and the care with which change is introduced to their work environment has become a concern of occupational health as well as the training department. It is hard to predict the future.

Injuries at the place of work and occupational diseases are increasing every year due to emerging trends. Ill health and accidents are costly to workers and their families and they can also hurt companies because of the cost of personal injuries they incurred from damage to property and equipment hence loss of production. Organizations loose skilled and qualified employees through such incidents. Health

and safety of employees if not improved organizations might end up losing the most expensive assets that is human capital. This has led to the study influence of occupational health and safety practices on employee productivity, (Dorman, 2000).

Sakari (1999) lack of funding, recruitment of staff as per establishment professional training for OHS practitioners provision of adequate tools and equipments, and lack of political goodwill are some of the constraints that hinder the development of OHS services in Kenya. In policy and law OHS is well stipulated but practically nothing is taking place. Most organizations do not implement these because of the expenses incurred during implementation and even maintenance.

Saleemi (2005) cites typical activities that have high risks in organizations. These include movement of people on floors and lifts, maintenances of and buildings and using electricity. Dealing with emergencies like spillage, fires and health hazards arising from use of equipment like computers are also mentioned as sources of risks. These risks may lead to loss of lives and cash for treating work related illness and employees may not cope with demands of the job and they reduce employee effectiveness and therefore organizational productivity. The HIV/AIDS epidemic has changed the look of first aid kits around the industrial world. Rubber gloves and blood clean up kits became standard as a reaction to the possibility of blood borne infection. What the next disease might require is a bit hard to predict. It is going to be necessary to keep flexibility in health planning in order to be able to quickly respond to changing situations.

According to Cole (2002) employee attitude if negative may become impairment in the OHS practices most of the workers are provided with the equipment's but they tend to misuse because they are oblivious of the dangers they are exposed to. More challenges that hinder the OHS practices include; poor work ergonomics lack of systematic training high injury rates, misuse of personal protective equipment also lack of adequate communication and consultation between management and the workers regarding decisions on OHS matters.

Another problem as per Cole (2002) that is looming large is the ever increasing cost of health care. An occupational health and safety management plan that includes the providing of health services must be constantly aware of the rising costs and the efforts of the insurance industry to provide alternative plans for coping with them. One thing is certain. Over the entire world, the government has taken an interest in worker health and safety. Government regulation becomes more and more demanding, and compliance becomes more and more essential.

All health and safety management systems undergo regular review. Changes in the law, production systems or working methods normally trigger an evaluation of existing arrangements. IGAD (1998) observes that changes in the in government can radically disrupt both preparedness plans and the administrative structures of occupational health and safety practices planning. Such radical changes normally interfere with the smooth running of health and safety practices in terms of management and budgetary control in the organization.

According to Koopman et al. (2002), presenteeism is a common concept amongst the workforce. Presenteeism is one of the major results of poor OHS practices. Some infections and illnesses are not reported to the industrial nurse. Some workers are also

reluctant to seek medical attention. These workers come to work as if everything is normal but in actual fact their health and fitness is poor. This concept should be eliminated in order to increase productivity.

2.1.6 Appropriate techniques of implementation of occupational health and safety practices in the organization

Towers (2003) explain that it is important to empower, educate and persuade workers to exercise their powers in the protection of their OHS. Employees are left to form their own OHS committees which are not taken seriously by the management. Most OHS statutory instruments state that it is the employer's obligation to provide a safe working environment for the workers. These regulations further clarify that it is the duty of the employer to disclose accident statistics and to keep appropriate records. An employee should be informed of the dangers that are eminent in their work. These statutes, further, stipulate that this information should be posted on areas that all workers can see, for example notice boards.

According to Armstrong (2001) Occupational Health Safety programmes deal with the prevention of accidents and diseases and minimizing the resulting loss and damage to persons and property from working conditions. He says they relate more to systems of work than the working environment and that health and safety policies are required to demonstrate that top management is concerned about the protection of the organizations employees from hazard at work and to indicate how this protection will be provided. Section 2(3) of HASAWA requires every organization with five or more employees to have a written health and safety policy. A safety policy should state the organization's commitment to making the health and safety of employees a priority

(London Hazards Center Fact sheet, 1997) .Thus the present study Occupational Health and Safety practices in employee productivity.

Employers must ensure that employees use chemical goggles or other appropriate eye protection when working with chemicals when exposure to these chemicals is likely to cause injury to the. It also advises that chemical-resistant gloves and sleeves, or other protection for exposed skin must be used when handling liquid paste or powdered flavoring ingredients that could cause dermal injury.

Organizational planning and control are crucial in managing safety and health of employees. Organizations have to design and establish systems and allocate responsibilities. Managers must integrate health and safety matters into their planning and decision making procedures, identify and choose methods and techniques that can be used to train and communicate with staff (IGAD, 1998).

Two types of types of monitoring systems can be implemented as reported by International Federation of Red Cross and Red Crescent (1995) to aid disaster management. One is a system to monitor the achievements of objectives and the extend of compliance with standards. This involves regular and carefully conducted inspection, covering one or all parts of the premises or one specific work activity. The other is reactive systems which monitor accidents; ill-health, incidences and other evidence of deficient health and safety productivity can be used. The association points out that a written record must be taken and circulated to others with specific health and safety responsibility and made available to employees.

UNEP (1998) points out that every employer shall assess the risks to the health and safety of his employees to which they are exposed at work. Where the employer employs five or more people, the significant findings of the assessments must be written down. When conducted properly, risk assessments can facilitate a structured approach to identifying risks and determining control measures. Risk assessments may be thematic (stress, violence, manual handling), task-centered (keyboarding, cleaning, driving) or relate to particular aspects of the working environment (hot working conditions) People at risk should be recorded, minimum legal standards, existing control measures and the need for further action while doing this workers must be consulted as part of the risk assessment. They will often know the hazards and risks of their jobs better than anybody else.

All health and safety management system need regular review. Change in the law, production system or working methods should all trigger an evaluation of existing arrangements. GAD (1988) observes that changes in government can radically disrupt both occupational health and safety practices and administrative structures of health and safety planning. It cites change of government leadership in Bangladesh which led to replacement of all previous employees; this implied staff with no experience officers. An independent assessment of the validity and reliability of management, planning and control systems may help to avoid complacency on the part of those managing the system and provide welcome input on how improvements made.

Hazard pre-employment health and workplace health, identification examinations safety education committees engineering return-to-work training health, surveys controls examinations and audits ergonomics, medical behavior work intervention

monitoring modification reorganization, protective biological administrative ,on-site health clothing and monitoring, controls and safety equipment centers, environmental stress health, promotion monitoring management, environmental individual and organizational safety are all examples of health practices present in the modern organizations. Orsbond (1993) emphasizes that managers must provide clear objectives and frameworks in which the employees can operate to enhance OHS practices in the organization .Modern management theory advocates that managers must provide leadership and coaching to enable the workforce to take the authority and responsibility to manage workplace risks. The climate should be that which values, respects and development employees.

Eve (1993) argues that the most effective methods of safety and health practices is by applying good management techniques .Genuine commitment to OHS practices by the management are likely to be effective and efficient throughout the rest of the organization. The Factory (legal Notice No 31, 2004) serves to improve the capacity of both workers and managers as it requires that those in safety committees must be trained by practitioners duly authorized by DOHSS, thereby ensuring quality standards and ethics in the profession. The ideal way to benchmark and achieve best practice components include: Occupational Health and Safety Policy Authorized by top management, clearly stated health and safety objectives, commitment to improving health and safety productivity, communicated to all employees, be reviewed periodically, planning identification of hazards and assessment and control of risks, legal and other requirements, objectives and target be at all levels, occupational health and safety management plans be in place and responsibilities should be designated. Means and timeframe should be outlined.

Implementation Resources Responsibilities and accountability, Consultation, Training and competency, Communication should be two way systems, Reporting, Documentation, Document and data control, Records and records management, Hazard identification, risk assessment and control of risks and Emergency preparedness. Measurement and Evaluation, Monitoring and measurement, Incident investigation, corrective and preventive action and OHSMS audit. Management Review e.g. Ensure continuity, suitability, adequacy and effectiveness, possible need to change policy, objectiveness and Continual Improvement. Review the systems and make the necessary improvements for perfection with the aim of attaining a positive safety culture.

Kenya has yet to ratify ILO conventions that are relevant to managing occupational health and safety. World Health Organization (WHO) and International Labour Organization (ILO) are currently working together for the benefit of the workers who are a part of the public. Through this Ministry of Health has the opportunity of working with the Ministry of Labour. Probably in the name of harmonization, the Ministry of Health should take over occupational health and safety in the country. In such a scenario, the appropriate cadre to oversee the activities is a public health officer.

Environmental Health Division in the Ministry of Health should start thinking safe at the planning stage. This should be reflected in all stages. The Medical departments as envisaged in the Public Health Act Chapter 242 Laws of Kenya seem to be focusing on curative services. We all know that preventive, promotive and rehabilitative, including research and information is inclusive but hidden, there is need to bring them

on the surface by changing to department of health. The ILO aims at the reduction of poverty in Africa by promotion of employment, social protection and protection of workers' health and safety, and by promotion of democracy through social dialogue and participation, by promotion of human rights and standards, strengthening of training and education and promotion of enterprise generation (Lehtinen *et al*, 2001).

Modification screening, behavior strategies and monitoring change is an essential quality of health promotion, this include the direct involvement of people in maintaining or improving their own health. The assessment of health promotion needs in an enterprise and the evaluation of work towards meeting them are the essential components of health promotion management. For the fruitful development of workplace health promotion management, it is important to recognize the central role of the empowerment of employees, in terms of competency and level of autonomy; to ensure an appropriate balance between the processes of rationalization and the capacities of the workforce; to include a comprehensive understanding of health in company policies and in all procedures involved in a continuous improvement process; to ensure the establishment of an enterprise-wide participatory infrastructure; and to enable all levels of employee to share their interests and expertise with the key players Health promotion is a strategy which complementary to occupational health. They target at different health problems and their causes. Health promotion should not be use as a guise to shift responsibility for protection of worker's health at workplace from employer to the worker herself or himself.

Management has responsibility to ensure workplace is free from unnecessary hazards and that conditions surrounding work place are not hazardous to employees' physical or mental health. From moral point of view, according to Aswathappa (2005)

employers have an obligation to maintain workplace that will minimize any negative aspect of situations affecting employees' health and safety but are not able to provide such an enabling environment always.

There is increasing and compelling evidence that providing a healthy and safe working environment has the potential to increase labour productivity and in turn increase business profits. There are, however, a number of issues that cannot be overlooked, for example, what are the negative outcomes, how best to evaluate OHS measures in terms of increased productivity and are there economic benefits? It is also evident that there are certain necessary ingredients required, such as a good level of cooperation between the management and employees, to ensure the success of an OHS intervention and the subsequent increases in productivity.

2.2 Theoretical Framework

The study adopted the Maslow's hierarchical of needs theory by Abram Maslow (1968) which states that individuals' needs are arranged in a hierarchy whereby when one needs has been fulfilled another need emerges and seeks satisfaction. Maslow's theory of motivation has frequently been applied within the industrial and organizational context (Maslow, 1965). Yet empirical research conducted to assess its validity and utility in industry does not adequately support such an application (Wahba & Bridwell, 1976). It is important to point out that the application of Maslow's theory to the industrial situation makes a basic, but implicit assumption, namely that individuals necessarily believe that they can satisfy their needs both at their work and through their work.

Blackler and Williams (1971) state that Maslow's theory was first presented to the business world by Douglas McGregor in 1960. Consequently, it is essential to note that when Maslow originally conceived of the major part of his theory of motivation, he did not have its specific application to organizational settings as a major aim. Hill's (1974) statement that: "His writings on this theme remain a drop in the ocean of his total output in psychological and other learned journals" further indicates that Maslow was essentially a thinker rather than a businessman or a manager. Maslow theory (1970) of motivation suggests a hierarchy of safety needs. These have to do with establishing stability and consistency in a chaotic world. These needs are mostly psychological in nature. We need the security of a home, family and job. However, if a job is dysfunction, i.e., an abused employee - cannot move to the next level as she is continuously fearful for her safety. Love and a sense of belonging are postponed until she feels safe.

Maslow theory of motivation proposes that people who have all their "lower order" needs met progress towards the fulfillment their potential. Typically this can include the pursuit of knowledge, peace, esthetic experiences, self-fulfillment, and oneness with God, enlightenment etc. So ultimately this is all to do with the desire for self transcendence. During the study on the occupational health and safety practices on employees' productivity, the study basically dealt with the psychological and safety needs. Maslow realized that people need to deal with the survival needs before they move on to any other levels of need. If they do not have the necessary food, clothing, water, shelter, and other crucial elements to survive, they are not likely to be concerned about learning new skills to qualify them for future jobs. Employers typically address basic needs by providing food and water throughout a working

session, allowing regular restroom, and providing an adequate lunch period. They can also build training programs and class content that add value and that will help employees maintain their current jobs and ultimately move on to higher paying ones that will increase the amount of money they have available to satisfy basic needs.

2.3 Conceptual Framework

To address safety needs of the hierarchy, we consider physical as well as psychological safety and security. As a worker you can do common sense things like make sure that the environment contains no safety hazards, such as wires that are not taped down, broken furniture, boxes that can cause accidents, or equipment that might fall and injure someone. Also provide mental security by explaining how to use materials will assist the workers to become more effective and efficient in the workplace or other situations, thereby helping to solidify their position in the organization as a knowledgeable, skilled employee or individual.

Occupational health and safety practice falls on all the hierarchy levels as follows: physiological needs for survival. They include the biological needs such as food, water, fresh air, sex, and clothing among others. Safety needs are centered on protections, predictability and stability to ensure that employees are not vulnerable and that they feel both physically and psychologically safe. Belonging or social needs is the need for affiliation, for love, affection and meaningful relationship with others.

Healthy and Safe employees have got feelings for this belonging need because they need to work in teams and have general employee employer relations these results in high productivity due to synergy. Esteem or ego needs are the needs for recognition

and respect from others, for self esteem and a personal sense of competence and achievement. Esteem needs enhances high productivity due to competence and the need for achievement. Self actualization needs is the need to develop employee full potential and use their abilities to the fullest extent. Health and safe employees use their full potential and abilities to the fullest extent hence high productivity. The study adopted a conceptual framework that shows the relationship between occupational health and safety and employee productivity as shown in Figure 2.1

Independent Variables

Dependent Variables

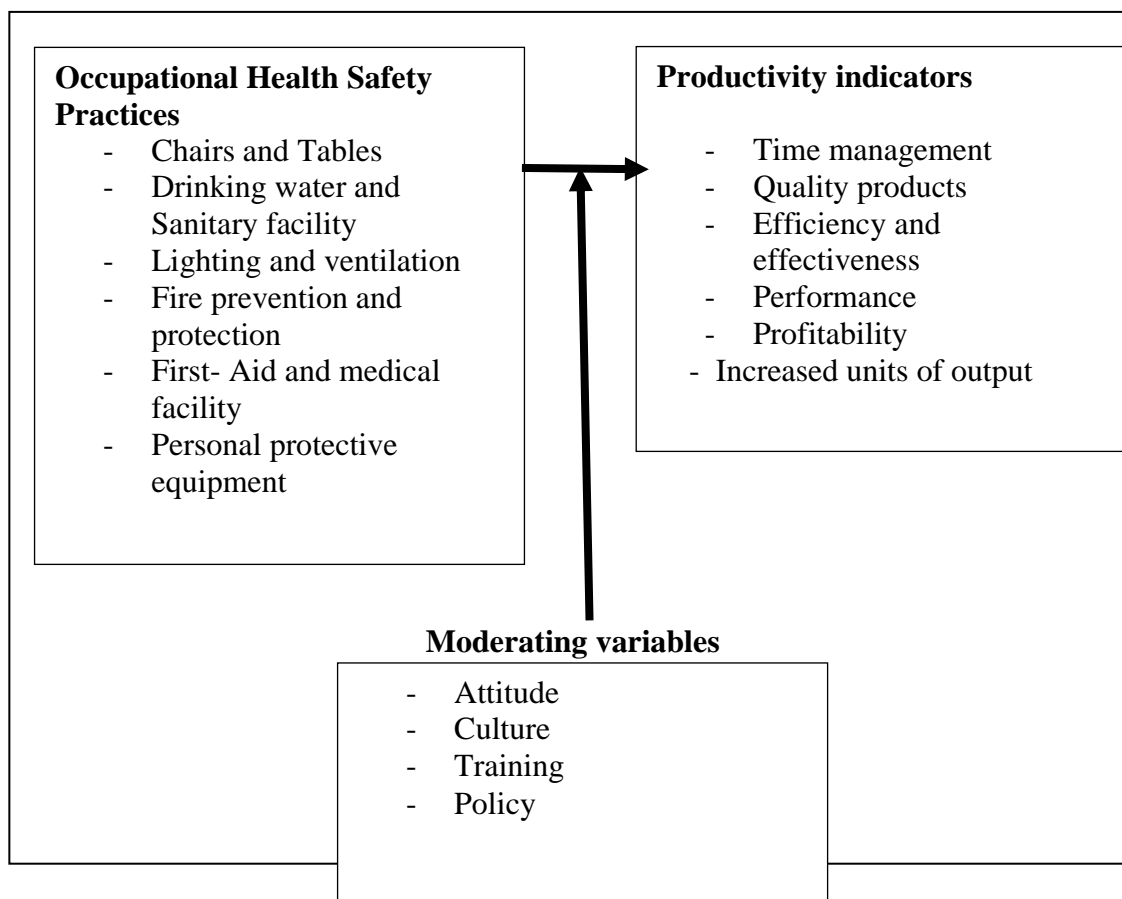


Figure 2.1. Effects of Occupational health and safety on employee productivity

Source: (Author 2011)

2.4 Research Gap

For a long time occupational Health and Safety was taken by Organizations as a side Issue preventing illnesses and injuries at work place but not as a business sense. There is no doubt that an employee who is physically, psychologically and mentally healthy will perform to his/her maximum level. Productivity is demonstrated by employees who enjoy good health and safety (Amazon 2008). On the other hand an organization with active and efficient occupational health and safety policies is able to attract and retain high performing employees. It is equally important to note that employees have the right to remove themselves from a work situation when they have reasonable justification to believe that there is serious danger to their lives or health.

Thus employee productivity can be said to be a function of occupational health and safety practices. The achievement of the highest standards of health and safety in the work place is important because the elimination or at least minimization of health and safety hazards and risk is the moral as well as the legal responsibility of employers, this is the overriding reason. Close and continuous attention is important because ill health and injuries inflicted by the system of work cause suffering and loss to individuals and their dependants. In addition accidents and absenteeism through ill health or injuries result in losses and damages to the organization.

Injuries at the place of work and occupational health diseases are increasing every year due to emerging trends. Ill health and accidents are costly to workers and their families and they can also hurt companies because of the cost of personal injuries they may incur from damage to property and equipment hence loss of production. Organizations loose skilled and qualified employees through such incidents. Health

and safety of employees if not improved organizations might end up losing the most expensive assets that is human capital. These however, have lead to the study influence of occupational health and safety practices on employee productivity.

CHAPTER THREE

METHODOLOGY

3.0 Overview

This chapter presents a detailed description of the selected research design. It describes the research design and methodology i.e. what was done and how it was done. The chapter comprises of several subsections, which include research design, target population, sampling design and sample size, data collection instrument, data collection procedure, reliability and validity and data analysis and presentation.

3.1 Study Area

The study was carried out in one of the sugar industries in western Kenya. This industrial segment was chosen because it is known to have occupational health and safety policies in practice. Mumias Sugar Company is known to have well established departments which include human resource, finance, purchasing and supplies, operations and general administration, thus drawing samples of participants was quite easy as compared to other organizations in the same industry. Since no studies on OHS practices on employee productivity has been conducted in the Mumias Sugar company the researcher chose to establish its effect.

3.2 Research Design

The study adopted the descriptive research design that involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection (Glass & Hopkins, 1984). Descriptive research utilizes elements of both quantitative and qualitative. It also involve collections of quantitative information that can be

tabulated along a continuum in numerical form, such as scores on a test or the number of times a person chooses to use a-certain feature of a multimedia program, or it can describe categories of information such as gender or patterns of interaction when using technology in a group situation.

Descriptive studies report summary data such as measures of central tendency including the mean, median, mode, deviance from the mean, variation, percentage, and correlation between variables. Descriptive research is unique in the number of variables employed. Like other types of research, descriptive research included multiple variables for analysis, yet unlike other methods, it requires only one variable (Borg & Gall, 1989). Descriptive study employed methods of analyzing correlations between multiple variables by using tests such as Spearman Rank correlation, regression, or multiple regression analysis. On the other hand, descriptive research also reported the percentage summary on a single variable.

Descriptive statistics utilized data collection and analysis techniques that yield reports concerning the measures of central tendency, variation, and correlation. The combination of its characteristic summary and correlation statistics, along with its focus on specific types of research questions, methods, and outcomes is what distinguishes descriptive research from other research types. This was found to be relevant in establishing the effect of OHS on employee productivity. Descriptive studies have an important role in research as it greatly increases our knowledge about what happens in organization productivity.

3.3 Target Population

At the time of the study the company had a work force of 1603 employees who appeared on the payroll. These included 9 top managers 39 middle level managers, 463 supervisors, and 1184 support staff in Mumias Sugar Company.

3.4 Sampling Designs

The study adopted purposive sampling design to select the entire top management. This is because the top management provided essential information in relations to occupational health and safety policies. Furthermore the population of the top management was small and manageable.

This study applied stratified and simple random sampling techniques to select the sample of the other employees. Stratified sampling was used to achieve desired representation from various subgroups in the population. According to Oso and Onen (2005), stratified sampling technique is a technique that identifies subgroups in the population and their proportions and select from each subgroup to form a sample. It groups a population into separate homogenous subsets that share similar characteristics so as to ensure equitable representation of the population in the sample. To ensure each category got a fair chance to participate in the study 100% of the Top Management was selected because they are few, 30% of the middle level Management was selected and 10% of supervisors and 10% subordinates respectively. According to Mugenda and Mugenda (2003) a minimum of 10% of the target population should be included in the sample when dealing with a heterogeneous sample. In simple sampling technique, the sample is selected without bias to arrive at

specific respondents from each stratum. Table 3.1 provides an explanation on how the sample of the respondent was arrived at the Company.

Table 3.1 Target Population

<i>Category</i>	Number	Sample size determination	Sample size
Top Management	9	100% of 9	9
Middle level Management	39	30% of 39	12
Supervisors	463	10% of 463	46
Support staff	1184	10% of 1184	118
Total	1603		185

(Source: Mumias Sugar Co. Database, 2011)

3.5 Data and Data Collection Instruments

During the study the questionnaire, interview schedule and observation was used to collect data.

3.5.1 Observation

This technique was adopted as it is direct-less thus it enables the study of behaviors as they occur. This enabled first hand collection of data thus prevents contamination that may arise due to intentional change of behavior by the participants in the presence of the researcher. An observation also describes phenomena as they occur in their natural settings. This was important in eliminating unique problems which may arise due to fear of the participants.

Analyzing the effect of some hazards may be difficult to record using observation method as data was collected after the occurrence of such phenomena. This technique was also used in noticing unusual occurrences which can neither be interviewed nor questioned. Here the researcher used observation sheet in recording information collected from the observation components of the occupational health and safety practices in the organization.

3.5.2 Questionnaires

Questionnaire was the main tool used to collect data. According to Kothari (2008), questionnaires are usually free from the interview bias as the answers are in respondent own words. Respondents have adequate time to give well thought out answers. Questionnaires save time and information collected from a very large sample. The questionnaire choice was based on the fact that they are free from bias of the interviewer and respondents have adequate time to give well thought out answers. It was appropriate for literate, educated and co-operative respondents where in this case all respondents of the study are considered meeting this requirement.

The researcher made use of the structured questionnaires and closed ended questions most of the items also adopted likert scale in this study. This was aimed at helping the study in drawing the inferences between occupational health and safety and employees productivity. The questionnaires was developed on the basis of the objectives of the study.

3.5.3. Interviews

Unstructured interviews were employed in this study to collect data from top management. In specific directional interviews was used. Here the participants were asked specific questions aimed at collecting certain answers concerning the study. The interviews were used as it provides a face to face encounter with the participants thus enables the researcher to control the line of questioning (Nachmias and Nachimias 1996). This was also to allow the collection of information which cannot be directly observed. Kothari (2006) notes that obtaining historical information was also possible through interviews. Here the researcher recorded the responses given by the participants in the interview sheet.

3.6 Validity and Reliability of Research instruments

According to Mugenda and Mugenda (2003) reliability is the consistency with which research instrument measures what it purports to measure. Piloting study was used to test the reliability of the research instruments; the test-retest technique was used to test the validity of the research instruments. The test involved administering the same instrument twice to the same group of subjects. The researcher provided a time lapse between the first test and the second tests. The researcher followed Test-retest method steps

1. Selected an appropriate group subject from Nzoia Sugar the company where the pilot study was carried out.
2. Administered the test to subjects.
3. All the initial conditions were kept constant; the tests were administered to the same subjects. The researcher administered the second test after one week.
4. The scores from both tests were correlated.

Mugenda and Mugenda (2003) defined validity as the accuracy and meaningfulness of inferences, which are based on research results. Validity was assured by peers and supervisors who cross checked the questionnaire to ensure it was according to the objectives.

A pilot study was carried out to enhance reliability and validity of research instruments. The instruments were tested in Nzoia Sugar Company with a population of 20 employees. A separate Organization was used for piloting to avoid respondents being accustomed to the study. The responses given by employees in this company were compared to those from Mumias Sugar Company to establish the reliability of the instruments i.e. if the instruments were stable after repeated trials.

3.7 Data Collection Procedure

Before conducting the study the researcher had to seek authorization from the school of Human Resource Development. The researcher was issued with a letter which she took to Mumias Sugar Company where the management authorized the study to be carried out. The participants were assured that the information given would be kept confidential and would only be used for the purpose of the study. This reduced suspicion and prejudice and even enhanced co-operation. The researcher personally administered the research tools after a prior visit that assisted in refining timings of distribution of questionnaires. It also provided a rough picture of the respondents' expectations. The researcher agreed with the respondents when the research instruments were to be administered and specifically dates of collecting the questionnaires. Adequate time was given to the respondents to respond to the questionnaires. At the elapse of the time given to respondents to fill the

questionnaires, the questionnaires were collected for analysis. The interview schedule was prepared by the researcher to target the top level management this was personally administered by the researcher within the duration set. The information given was ready for analysis.

3.8 Data Analysis

Kombo *et al.*, (2006) alludes that analysis of data varies with the purpose of the research, the complexity of the research design and the extent to which conclusion can be reached easily. After all data has been collected, the researcher conducted data cleaning, which involved identification of incomplete or inaccurate responses and correct to improve the quality of the responses. After data cleaning, the data was coded and entered in the computer for analysis using the Statistical Package for Social Sciences (SPSS) version 20. The research yielded both qualitative and quantitative data. Quantitative techniques such as descriptive statistics and inferential statistics were used to understand relationships between different variables. Qualitative data was analyzed qualitatively using content analysis based on analysis of meanings and implications emanating from respondents information and documented data.

Inferential statistics used include Spearman's rho coefficient correlation (r) that were used to determine association between between Occupation health and safety practices on employee productivity. The correlation analysis was used to establish the relationship between two variables in a linear fashion. The multiple regression was used to establish the Occupation health and safety practices predicting employee productivity. Simple descriptive statistics was employed to analyze quantitative data.

After analysis, data was presented in tabular form using frequencies and percentages alongside inferential statistics.

Model specification

The model used in this study is an econometric model that was adopted from Mukras M. S. (1993)

$$Y_i = b_0 + b_1X_{i1} + b_2X_{i2} + \dots + \alpha_k X_{ik} + \varepsilon_i \dots\dots\dots\text{equation 3.1}$$

The model is a multivariate linear regression model with k – explanatory variables.

$$OHS = b_0 + b_1 LVF + b_2 DW + b_3 CTF + b_4 FA + b_5 GH + b_6 FP + b_7 + \varepsilon \dots\dots\dots\text{equation 3.2}$$

Where;

OHS = Occupational Health and Safety

LVF = Lighting and Ventilation

DW = Drinking water and sanitary facilities

CTF = Chairs/tables and facilities for sitting

FA = First Aid kit and medical facility

GH = Good house keeping

FP = Fire Prevention and protection

PPE= Personal protective equipments

ε = error term

b_0 = intercept

b_1, \dots, b_7 = coefficients of independent variables

3.9 Ethical Issues

As kothari (2002) argues despite the high value of knowledge gained through research, knowledge should not be pursued at the expense of human dignity. The

researcher asked permission from Mumias Sugar Company Limited management. The questionnaires were handled with confidentiality and subjects were advised not to indicate their names on the questionnaire. The research findings were also made confidential and were used by the researcher and in answering the research questions and no publication will be done without a notification from the parties involved. The participants were also informed before collecting any data from them. Nevertheless the participants had the freedom to ignore items they wish not to respond.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0 Overview

This chapter presents the findings of the study based on the study objectives. The response rate was found to be 93% since out of 185 subjects picked only 172 responded.

4.1 Demographic information of the Respondents

Finding out the general information of the respondents is very important because it enables the researcher to gauge the reliability of the data received and know the type of people that he/she is dealing with. This information includes gender, age brackets, educational level, years of experience and their cadre.

4.1.1 Gender of the respondents

The researcher sought to know the gender of the respondents in the organization. This was considered important as in many organizations gender dictates the nature of job an employee does (Table 4.1).

Table 4.1 Gender of the respondents

Gender	Frequency	Percent
Male	98	57.0
Female	74	43.0
Total	172	100.0

Source: (survey data, 2011)

It was established that 98 employees representing 57% were male while the remaining 74 that is 43% were female. This therefore indicates a gap between the female and male employees at the organization and also shows that the organization employs more men than women. This fact was also noticed by the researcher during observation. This is attributed by to the nature of duties performed in the organization especially at the factory.

4.1.2 Age bracket of the Respondents

Age is also one of the factors considered when it comes to employment and that is why the researcher decided to investigate to determine whether they were young, mature or old. This is a demographic feature that affects behaviors or perception of respondents. It was important to assess the age of respondents as this would affect the way each would behave in the work place. Moreover this is because the younger a person the more he or she understands a given concept and the more active a person is. Data on age distribution is presented below

Table 4.2 Age bracket of the respondents

Age	Frequency	Percent
18-25 Years	30	17.4
26-35 Years	58	33.7
35-45 Years	43	25.0
46-55 Years	34	19.8
56 Years and above	7	4.1
Total	172	100.0

Source: (survey data, 2011)

The results indicated that majority of the respondents were in the age bracket between 26-35 years, there were 58 employees constituting 33.7% of the total respondents. This was followed by those who have an age bracket of 35-45 years that is 43 respondents representing 25%. The employees who had an age bracket falling between 46-55 years were 34 or 19.8%. Those who were between 18-25 years were 30 or 17.4% while the remaining 7 or 4.1% were over 56 years. It was therefore concluded that employees were mature enough and better placed to handle issues concerning occupational health and safety practices and productivity well in the organization.

4.1.3 Level of education

Majority of the respondents had O level as their highest level of education with 71 respondents that is 41.3%; this was then followed by those who had diplomas that is 48 or 27.9% (Fig. 4.1). There were also 30 or 17.4% degree holders. Those who had an A level certificate as their highest educational level were 18 or 10.5%. The remaining 2.9% or 5 employees had masters as their highest level of education. This means that most of the employees in organization are literate and can understand the issues of occupational health and safety in the organization and be in a position to handle them properly. This is also an indication that the management has ample time implementing policies since the employees are in a position to understand them well.

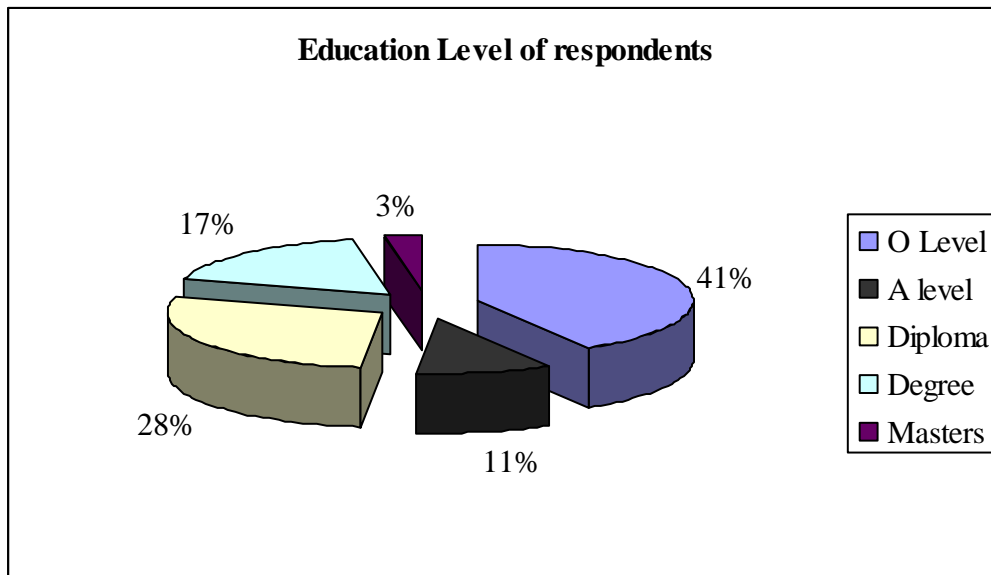


Figure 4.1 Level of education

Source: (survey data, 2011)

From the study it showed that most of the employees in organization are literate and can understand the issues of occupational health and safety in the organization and be in a position to handle them properly. The findings agree with Cole (2008) that learning activity which is directed towards the acquisition of specific knowledge and skills for the purposes of a task. According to Armstrong (2006) Health and safety training is a key part of the preventative programme. Health and safety training spells out the rules and provides information on potential hazards and how to avoid them. Dessler (2005) asserts that training is another way of reducing unsafe and unhealthy acts, especially for new employees. They should be instructed in safe practices and procedures, warn them of potential hazards, and work on developing a safety-conscious attitude.

4.1.4 Marital status of the respondents

The marital status of the respondents were sought to establish whether the respondents were single, married, divorced, separated or widowed. The results indicated a bigger percentage that is 52.3% or 90 respondents as single, 35.5% or 61 were married, 9.3% or 16 were divorced (Fig. 4.2). The remaining 1.7% or 3 were widowed and 2 representing 1.2% were separated.

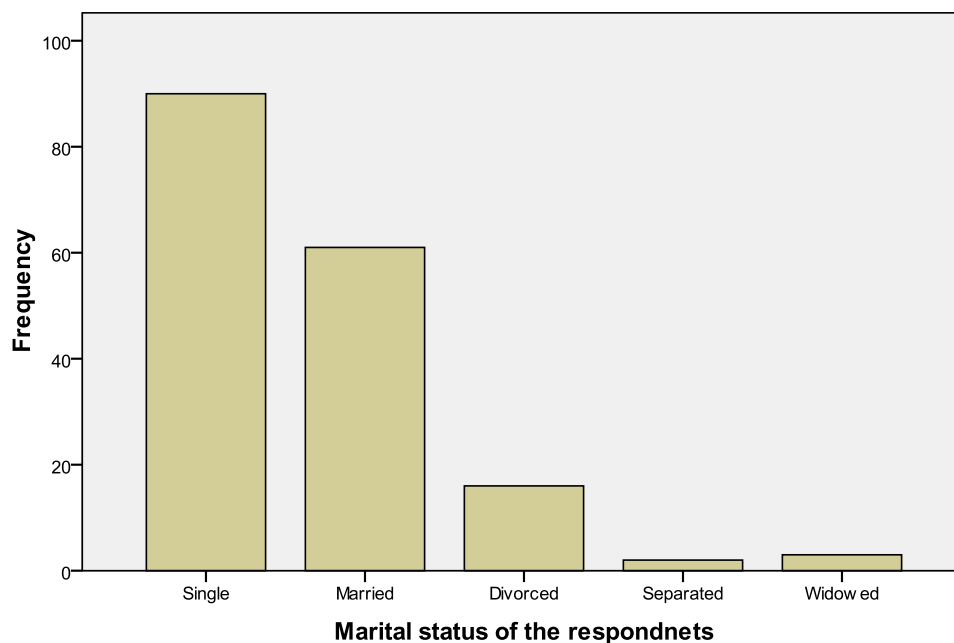


Figure 4.2 Marital status of the respondents

Source: (survey data, 2011)

The findings concurs with Aswathappa (2005) who asserts that the reason for establishing occupational health and safety practices at work place and managers must undertake accident prevention measures to minimize the pain and suffering the

injured worker and their family are exposed to as a result of the accident. The happiness of the family depends upon the health and safety of the worker who normally is the bread winner.

It also concurs with Robbins (2003) that effective workplace health and safety practices can help to save the lives of workers by reducing hazards and their consequences. Poor working conditions can affect the environment workers live in. This means that worker, their families, other people in the community, and the physical environment around the workplace, can all be at risk from exposure to workplace hazards. All these can be eliminated by the implementation of OHS practices in the organization.

4.1.5 Position of the respondents in the organization

The position held by the respondent in the organization was assessed since it determines the nature of strategic issues the respondent handles in the organization and also the nature of occupational health and safety elements he or she is accorded in the organization. Table 4.3 shows the representation of respondents according to positions.

Table 4.3 Position of the respondents in the organization

Position in the organization	Frequency	Percent
Top level management	6	3.4
Middle level management	12	7.5
Supervisors	42	24.4
Subordinate	112	64.5
Total	172	100.0

Source: (survey data, 2011)

The results indicated that majority that is 64.5 % or 111 employees were subordinate, 42 employees representing 24.4% were supervisors and 13 employees or 7.5% middle level managers. The remaining 3.4% or 6 were top management. This can be concluded that the majority are the subordinates and should be included in the decision making of the organization concerning OHS as they are the most affected by the policies. On that note they are the ones who should be well conversant with OHS practices. The findings agree with GOK (2007), that it is the duty of every employer to prepare and revise a written statement of general policy with respect to health and safety of employees and arrangements should be made to carry out the policy and to bring the statement and any revision of it to the notice of all the employees.

The findings agree with Luis *et al* (2007) who suggested that managers should communicate safety rules and enforce them. OSHA obligates employees to adhere to safety rules, and in good programs managers' are willing to use the disciplinary system to penalize unsafe work behaviors.

4.1.6 Working experience of the respondents

To know the number of years the staff have worked in the organization is important, since this will indicate the exposure and experience that the staff has had in the organization and which may relate to the efficiency in employee work environment. Experienced employees are better placed in understanding the OHS practices and policies in the organization. The findings of this enquiry are presented in Table 4.4.

Table 4.4 Working experience of the respondents

Working experience	Frequency	Percent
1-5 Years	27	15.7
6-10 Years	47	27.3
11-15 Years	45	26.2
16-20 Years	22	12.8
21-25 Years	28	16.3
Over 26 Years	3	1.7
Total	172	100.0

Source: (survey data, 2011)

The findings agree with Dessler (2005) who asserts that experience is another way of reducing unsafe and unhealthy acts, especially for new employees. They should be instructed in safe practices and procedures, warn them of potential hazards, and work on developing a safety- conscious attitude.

4.2 The occupational health and safety practices that are currently used in Mumias Sugar Company

The employees were asked to identify the Occupational health and safety practices that are currently used in Mumias Sugar Company and the findings are summarized in the table 4.5 below. Majority of the employees 165(95.9%) identified lighting and ventilation and First aid kit and medical facility as occupational health and safety practices currently used in Mumias Sugar Company. However 161(93.6%) identified drinking water and sanitary facilities, with 156(90.7%) using personal protective equipments, 155(90.1%) identify good house keeping, with 153(89%) using fire

prevention and protection and 150(87.2%) identifying the use of chairs, tables and facilities for sitting as occupational health and safety practices currently used in Mumias Sugar Company.

Table 4.5 Occupational health and safety practices that are currently used in Mumias Sugar Company?

	Used		Not Used	
	Freq	%	Freq	%
Lighting and ventilation	165	95.9%	7	4.1
Drinking water and sanitary facilities	161	93.6	11	6.4
Chairs, tables and facilities for sitting	150	87.2	22	12.8
Personal protective equipments	156	90.7	16	9.3
First aid kit and medical facility	165	95.9	7	4.1
Good house keeping	155	90.1	17	9.9
Fire prevention and protection	153	89.0	19	11.0

Source: (survey data, 2011)

The findings showed that majority of the employees identify that lighting and ventilation, First aid kit and medical facility, drinking water and sanitary facilities, using personal protective equipments, good house keeping, fire prevention and protection, the use of chairs, tables and facilities for sitting as occupational health and safety practices currently used in Mumias Sugar Company. This is in conformity with

the Factories Act Cap 514 of the Laws of Kenya which requires that any organization employing more than 5 workers must implement a safety programme which shall comprise a written policy.

It also implicates that the Management of Mumias Sugar company has put in place standard safe working procedures to protect employees and the public from accidents and occupational hazards. Consequently employees must follow safety guidelines in every workplace to ensure their safety and that of equipment, customers, the public and the environment.

4.2.1 Cadre involved in the implementation of occupational health and safety practices

To establish the cadre of the organization tasked with the implementation of occupational health and safety in the organization. The respondents had varied opinion on this issue and it is illustrated below.

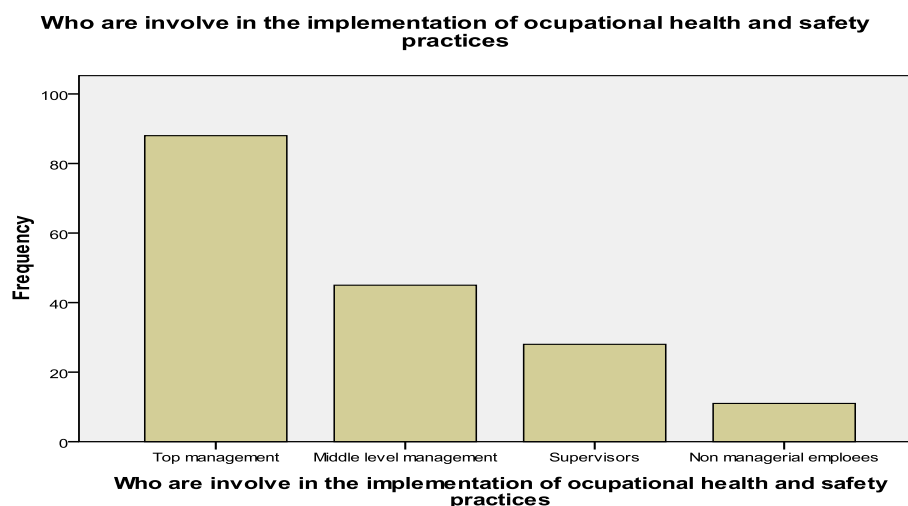


Figure 4.3; Cadre involve in the implementation of occupational health and safety practices

Source: (survey data, 2011)

The results indicated that top management are responsible for implementation as it was cited by 51.2%, there were others who cited middle level management that were 26.2%. Those who cited supervisors were 16.3% and the remaining 6.4% cited non managerial employees. This is an indication that subordinate were side lined when it comes to implementation of OHS practices in the organization.

4.2.2 Rating of occupational health and safety

The researcher asked the respondents to rate the success of occupational health and safety in the organization. The researcher accorded a rating scale beginning from very successful, fairly successful, successful and unsuccessful. The respondents reacted as summarized in (Table 4.6).

Table 4.6 Rating of occupational health and safety

Rating on success of OHS	Frequency	Percent
Very successful	72	41.9
Fairly Successful	78	45.3
Successful	17	9.9
Unsuccessful	5	2.9
Total	172	100.0

Source: (survey data, 2011)

Occupational health and safety in the organization is fairly successful according to 45.3% or 78 of the respondents. Other 41.9% or 72 rated OHS as very successful, minority 9.9% or 17 rated as just successful and only 5 or 2.9% cited as unsuccessful. This indicates that occupational health and safety in Mumias Sugar Company is

successful and the policy is in place as 97.1% of the respondents rated it to be successful. This assisted the researcher to actually find out if the presence of occupational health and safety has any effect on productivity. The study agree with Goetzel et al. (1998) that employees who are depressed and highly stressed cost employers significantly more in health care costs compared to those without these psychosocial risk factors. From the findings it is a clear indication that the management has created an enabling environment for employees which ensures that they are ready to handle an emergency situation and be productive enough in their various fields.

4.2.3 Elements of occupational health and safety

It was also established that the major components of occupational health and safety found in the organization so as to get information on OHS and the magnitude of it in the organization. The results are tabulated in Table 4.7.

Table 4.7 Elements of occupational health and safety

Element of OHS	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Lighting and ventilation	90	52.3	75	43.6	1	0.6	2	1.2	4	2.3
Drinking water and sanitary facilities	81	47.1	80	46.5	4	2.3	4	2.3	3	1.7
Chairs, tables and facilities for sitting	69	40.1	81	47.1	10	5.8	9	5.2	3	1.7
Personal protective equipments	75	43.6	81	47.1	7	4.1	6	3.5	3	1.7
First aid kit and medical facility	78	45.3	87	50.6	1	0.6	3	1.7	3	1.7
Good house keeping	71	41.3	84	48.8	5	2.9	9	5.2	3	1.7
Fire prevention and protection	77	44.8	76	44.2	5	2.9	11	6.4	3	1.7

Source: (survey data, 2011)

The findings showed that majority of the employees agree that lighting and ventilation, first aid kit and medical facility, drinking water and sanitary facilities, using personal protective equipment's, good house keeping, fire prevention and protection, the use of chairs, tables and facilities for sitting as major components of occupational health and safety found in Mumias Sugar Company.

The finding concurs with Robbins (2003) that effective workplace health and safety practices can help to save the lives of workers by reducing hazards and their consequences. Health and safety programmes also have positive effects on both worker morale and productivity, which are important benefits. As the Occupational health and safety encompasses the social, mental and physical well-being of workers in all occupations. Poor working conditions have the potential to affect a worker's health and safety. Unhealthy or unsafe working conditions can be found anywhere, whether the workplace is indoors or outdoors. The findings implicates that the company has put in place standard safe working procedures to protect employees and the public from accidents and occupational hazards. Consequently employees must follow safety guidelines in every workplace to ensure their safety and that of equipment, customers, the public and the environment.

4.3. Indicators of productivity at Mumias Sugar

The researcher wanted to establish the indicators of productivity due to implementation of occupational health and safety practices. The results is as shown below

Table 4.8 Indicators of productivity at Mumias Sugar

Indicators of productivity	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Improved quality of products	98	54.7	64	39.5	2	1.2	4	2.3	4	2.3
High productivity by employees	85	49.4	78	45.3	2	1.2	3	1.7	4	2.3
Improved time management	79	45.9	72	41.9	9	5.2	8	4.7	4	2.3
General profitability	76	44.2	74	43.0	10	5.8	7	4.1	5	2.9
Increased Units of output	79	45.9	74	43.0	5	2.9	8	4.7	6	3.5
Employee efficiency and effectiveness	83	48.3	73	42.4	1	0.6	7	4.1	8	4.7

Source: (survey data, 2011)

From the study majority of the respondents agreed that improved quality of products, high productivity by employees, improved time management, general profitability, increased units of output as an indicator and employee efficiency and effectiveness as indicators of organizational productivity in the implementation of occupational health and safety practices in Mumias Sugar Company.

This agrees with De Greef (2003) who argues that OSH measures have important implications on company profitability by affecting revenue and production costs. These will result to decrease of the production costs (owing to fewer accidents, damages and less absenteeism etc) and increase in revenue (due to better productivity, efficiency, quality, effectiveness etc). These will translate to increase in revenue hence profitability. Goetzel (1999) introduced a method called “Health productivity management” which aims at establishing links between today’s business climate, people, operational challenges and ultimately the productivity of an organization. His method will assist a great deal in the implementation of occupational health and safety ion organizations so as to enhance employee productivity.

4.4 Benefits of OHS in the organization

The study sought to establish the benefits of occupational health and safety practices in Mumias Sugar, the results is as shown in table 4.9.

Table 4.9 Benefits of OHS in the organization

Benefits of OHS in the organization	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Attraction and retention of workers	84	48.8	65	37.8	4	2.3	11	6.4	8	4.7
Reduced accidents and injuries	83	48.3	76	44.2	1	0.6	8	4.7	4	2.3
Reduced insurance costs and workman compensation	74	43.0	76	44.2	9	5.2	7	4.1	6	3.5
Maximization of employee productivity	79	45.9	76	44.2	2	1.2	9	5.2	6	3.5
Demonstration of organizations social responsibility	77	44.8	73	42.4	6	3.5	9	5.2	7	4.1
Improved corporate image	78	45.3	69	40.1	6	3.5	11	6.4	8	4.7
Reduced sick offs and absenteeism	83	48.3	72	41.9	4	2.3	6	3.5	7	4.1

Source: (survey data, 2011)

Majority of the respondents agreed that occupational health and safety helps in maximization of employee productivity, demonstrations of organizations social responsibility, improved corporate image and reduced sick off and absenteeism were the benefits of occupational health and safety in the organization. The findings agree with HSE (2004) which revealed that organizations believed that improving health and safety of employees was integral risk management. Improvement of safety and health of employees and customers ploughs back to the organizations productivity in general. These benefits included a mix of both tangible and intangible benefits, such as maintainance of brand and reputation, client's requirements, and staff morale, as well as health ad safety.

The findings concurs with Liukkonen *et a.,l* (1996), that OHS play a great role in reduction of cost for the organization the cost through the work-related accidents or diseases which very costly and can have many serious direct and indirect effects on the lives of workers and their families. It is difficult to demonstrate conclusively the extent to which business prosperity benefits from good health and safety or on the contrary, to say that prosperous businesses have good health and safety because they are able to afford it (Health and Safety Executive, 2006). However, based on available evidence, the Occupational Health and Safety Reports argue that there is clearly a vicious circle in that a healthy and happy workforce is more productive, leading to increased investment in health and safety to reduce accidents, which in turn leads to further productivity gains.

4.5 Challenges facing implementation in Mumias Sugar

It was important to establish the challenges facing the organization in managing and implementing occupational health and Safety.

Table 4.10. Challenges facing OHS in Mumias Sugar Company

Challenges facing OHS	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Failure to involve employees	82	47.7	71	43.1	3	1.7	0	0	16	9.3
Rapid change in technology	90	52.3	75	43.6	3	1.7	4	2.3	0	0
HIV/TB epidemic	84	48.8	76	44.2	8	4.7	4	2.3	0	0
Employee negative Attitude	76	44.2	67	39.0	7	4.1	22	12.8	0	0
High cost of training	86	50.0	72	41.9	5	2.9	7	4.1	2	1.2
Government policy	74	43.0	76	44.2	7	4.1	11	6.4	4	2.3
High cost of OHS equipments	85	49.4	76	44.2	3	1.7	6	3.5	2	1.2

Source: (survey data, 2011)

The researcher noted that failure to involve employees in the program of occupational health and safety as 153 (90.8%) agreed. On the contrary there were 16 (9/3%) who disagreed and only 3 (1.7%) were undecided. There were also the issue of rapid change in technology as a big challenge, an overwhelming 165 (95.9%) agreed

whereas a minority comprising of 4 (2.3%) disagreed but 3 (1.7%) were undecided. HIV/TB epidemic were also cited as a challenge, 160 (91.9%) agreed but 4 (2.3%) disagreed. The remaining 8 (4.7%) were indecisive. Employee negative attitude was also discussed at a length, 143 (83.2%) agreed but 22 (12.8%) had a contrary opinion they disagreed and 7 (4.1%) were undecided.

Employees also indicated the issue of high cost of training as a challenge, 158 (91.9%) of the total respondents agreed however 9 (5.2%) disagreed and 5 (2.9%) become indecisive. On the government policy, 150 (87.2%) agreed but 15 (8.7%) disagreed and a minority 3 (2.3%) were undecided. Finally on the challenges the matter of high cost of OHS equipments 161 (93.6%) agreed however 8 (4.7%) disagreed and 3 (1.7%) were indecisive.

The findings agrees with Sakari (1999) that lack of funding, recruitment of staff as per establishment professional training for OHS practitioners provision of adequate tools and equipments, and lack of political goodwill are some of the constrains that hinder the development of OHS services in Kenya. Further Cole (2002) argues that employee attitude if negative may become impairment in the OHS practices most of the workers are provided with the equipments but they tend to misuse because they are oblivious of the dangers they are exposed to.

This concurs with interviews with management which revealed that employees tend to ignore the use of protective equipment without proper explanations when asked to. From the researcher observation it was found out that most employees walking in and out of the factory without head gear and ear muffs. The researcher found out that

female employees especially are the ones who default this practice. This implies that without commitment of employees the implementation of OHS can be very challenging to the management.

4.6 Appropriate techniques of OHS implementation

The researcher sought to establish the appropriate techniques of implementing OHS in the organization; the results are as shown below

Table 4.11: Appropriate techniques of OHS implementation

Appropriate techniques of OHS implementation	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Top management involvement	70	40.7	88	51.2	6	3.5	7	4.1	1	0.6
Fair budgeting	73	42.4	89	51.7	5	2.9	5	2.9	0	0
Frequent training on OHS practices	75	43.6	92	53.5	1	0.6	4	2.3	0	0
Involving employees on decision making	69	40.1	83	48.3	4	2.3	13	7.6	3	1.7
Peer education and sensitization	71	41.3	87	50.6	1	0.6	10	5.8	3	1.7
Rules and regulation on OHS practices	70	40.7	85	49.4	3	1.7	9	5.2	5	2.9
OHS committee to oversee implementation	66	38.4	87	50.6	2	1.2	14	8.1	3	1.7

Source: (survey data, 2011)

The subject of appropriate techniques of OHS implementation were discussed at length, the way of involving top management was cited by the respondents as 158 (91.9%) agreed, nevertheless 8 (4.7%) disagreed and 6 (3.5%) were indecisive. The respondents were asked on whether fair budgeting could be appropriate measure and an overwhelming 162 (94.1%) agreed but 4 (2.3%) disagreed and 5 (2.9%) were indecisive. A bigger majority of the respondents 167 (97.3%) agreed that the appropriate way of implementing OHS is by frequent training on OHS practices nonetheless 4 (2.3%) disagreed and only 1 (0.6%) became indecisive.

The respondents were also asked whether involving employees on decision making could be appropriate technique of implementing OHS, 153 (90.8%) agreed on the opposing were 16 (9.3%) who disagreed and only 4 (2.3%) were undecided. Peer education and sensitization were also responded to by the employees, 158 (91.9%) agreed, nevertheless 13 (7.5%) disagreed and only 1 (0.6%) became indecisive. The researcher also asked the respondents whether setting rules and regulation on OHS practices could be a technique, 155 (90.1%) agreed but 14 (8.1%) disagreed and 3 (1.7%) were undecided. Finally OHS committee to oversee implementation were also indicated as appropriate technique, there were 153 (90.8%) agreed on the opposing were 17 (9.8%) who disagreed and only 2 (1.2%) were undecided. 100%. The findings concur with Towers (2003) explain that it is important to empower, educate and persuade workers to exercise their responsibility in the protection of their OHS. Employees are left to form their own OHS committees which are not taken seriously by the management.

This is also supported by Eve (1993) who argues that the most effective methods of safety and health practices are by applying good management techniques. Genuine commitment to OHS practices by the management is likely to be effective and efficient throughout the rest of the organization. From observation the researcher found out that the organization is very keen in implementing OHS within and without the organization. It was observed that there are very big banners even outside the compound of the organization that are sensitizing on occupational diseases like HIV/AIDS. This implies that the management is fully committed to implement OHS in the organization. Interviews' with the management revealed that the organization is doing anything possible to ensure that the OHS is implemented They have formed committees where majority of the members are the non managerial staff.

4.7 Spearman's rho Coefficient on influence of the occupational health and safety practices influence on employee productivity

Correlation analysis was used to describe the strength and direction of the linear relationship between two variables, depending on the level of measurement as shown in Table 4.12. The relationship between independent variables (the occupational health and safety practices influence) and dependent variable (employee productivity) was investigated using spearman's rho Coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity.

There was a positive relationship and influence of the fire prevention and protection practices ($r=.456$, $p<.005$) on employee productivity. The high employee productivity was influenced by the increased fire prevention and protection practices. There was a

positive relationship and influence of the chairs/tables and facilities for sitting ($r=.304$, $p<.005$) on employee productivity. The high employee productivity was influenced by the increased chairs/tables and facilities for sitting. There was a positive relationship and influence of the lighting and ventilation ($r=.312$, $p<.005$) on employee productivity. The high employee productivity was influenced by the increased lighting and ventilation. There was a positive relationship and influence of the first aid kit and medical facility ($r=.312$, $p<.005$) influence on employee productivity.

The high employee productivity was influenced by the increased first aid kit and medical facility. This can be attributed to the availability of more first Aid kits to be used in times of injuries and emergencies. This also applies to the increase in the number of health facilities to cater for unprecedented injuries in organizations. There was a positive relationship and influence of the personal protective equipments ($r=.392$, $p<.005$) on employee productivity. The high employee productivity was influenced by the increased personal protective equipments. There was a positive relationship and influence of the good house keeping ($r=.426$, $p<.005$) influence on employee productivity.

The high employee productivity was influenced by the increased good house keeping. There was a positive relationship and influence of the drinking water and sanitary facilities ($r=.317$, $p<.005$) influence on employee productivity. The high employee productivity was influenced by the increased drinking water and sanitary facilities. From the study findings there was a positive relationship and influence of the occupational health and safety practices on employee productivity. Thus the high employee productivity was influenced by the increased Occupational health and safety practices.

Table 4.12 Spearman's rho Coefficient on influence of the occupational health and safety practices influence on employee productivity

Spearman's rho Coefficient	Employee productivity	Lighting ventilation	Drinking water	Chair	Protective equipment	First Aid	House keeping	Fire protection
Employee productivity	1.000							
Lighting and Ventilation	.312**	1.000						
Drinking water and sanitary facilities	.317**	.851**	1.000					
Chairs/tables and facilities for sitting	.304**	.657**	.721**	1.000				
Personal protective equipments	.392**	.737**	.797**	.788**	1.000			
First Aid kit and medical facility	.389**	.756**	.738**	.682**	.814**	1.000		
Good house keeping	.426**	.646**	.739**	.782**	.866**	.829*	1.000	
Fire Prevention and protection	.456**	.732**	.739**	.693**	.857**	.882*	.870**	1.000

** . Correlation is significant at the 0.01 level (2-tailed).

a. List wise N = 172

Source: (survey data, 2011)

4.7.1 Regression analysis on occupational health and safety practices influence on employee productivity

This sub-section deals with regression analysis using ordinary least squares (OLS) method. Regression analysis was carried out taking into consideration the dependent variable and independent variables, test values and their significance was produced for each regression coefficient. *t* - tests was used to identify whether each *b* values differs significantly from zero. *R* represents the values of multiple correlation coefficients between the independent variables (fire prevention and protection, chairs/tables and facilities for sitting, lighting and ventilation, first aid kit and medical facility, personal protective equipment's, good house keeping, drinking water and sanitary facilities) as predictors) used in the model and employee productivity as the dependent variable.

All the predictors used in the model represent a simple correlation between the dependent variable and the factors that are considered by sugar industry as shown in table 4.13. R^2 represented the measure of variability in employee productivity that is accounted for by the predictors (independent variables). From the model, ($R^2 = .812$) an indication that all the predictors in the model account for only 81.2% variation in the employee productivity in sugar industry. The variation in the employee productivity has been explained well by the predictors in the model.

The adjusted R^2 gave the idea of how well our model generalizes and ideally, its value would be the same or very close to R^2 . From the findings the value of adjusted R^2 is .351, showing that if the model was derived from the population rather than the sample it would account for approximately 35.1% less variance in the outcome.

Change statistics were used to test whether the change in R^2 is significant using F-ratio. The model caused R^2 to change from zero to 106.75 and this change gave rise to an F-ratio of seven, which is not significant at a probability, $p > .05$.

Table 4.13 Model Summary on occupational health and safety practices influence on employee productivity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
.906 ^a	.820	.812	.35105	.820	106.748	7	164	.000	2.091	.906 ^a

a. Predictors: (Constant), Fire Prevention and protection, Chairs/tables and facilities for sitting,

Lighting and Ventilation, First Aid kit and medical facility, Personal protective equipments, Good house keeping, Drinking water and sanitary facilities

b. Dependent Variable: Employee productivity

Source (survey data, 2011)

The analysis of variance was used to test whether the model could significantly fit in predicting the outcome than using the mean as shown in Table 4.14. The F -ratio represents the ratio of improvement in prediction that results from fitting the model, relative to the inaccuracy that exists in the model. The F -ratio was 106.75 which is likely to happen by chance and was significant ($P < .05$). The model significantly improved the ability to predict the productivity of employees.

Table 4.14 ANOVA on Occupational Health and Safety Practices Influence on Employee Productivity

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	92.087	7	13.155	106.748	.000 ^a
Residual	20.211	164	.123		
Total	112.298	171			

a. Predictors: (Constant), Fire Prevention and protection, Chairs/tables and facilities for sitting,

Lighting and Ventilation, First Aid kit and medical facility , Personal protective equipments, Good house keeping, Drinking water and sanitary facilities

b. Dependent Variable: Employee productivity

Source (survey data, 2011)

4.7.2 Coefficients of Employee Productivity

Table 4.15 shows the estimates of β values and gives an individual contribution of each predictor to the model. The β value tells us about the relationship between the productivity of employees with each occupational health and safety practices. The positive β values indicate the positive relationship that exists between the predictors and the outcome and the negative β values indicate the negative relationship.

The β value for fire prevention and protection, lighting and ventilation, personal protective equipment's and good house keeping had a positive coefficient thus positive relationship. The β value for chairs/tables, first aid kit and medical facility and facilities for sitting and drinking water and sanitary facilities had a negative coefficient thus negative relationship. From the findings it showed that occupational health and safety practices that had positive relationship with productivity of

employees include; fire prevention and protection, lighting and ventilation, personal protective equipment's and good house keeping, while chairs/tables and facilities for sitting, first aid kit and medical facility and drinking water and sanitary facilities had negative relationship as summarized in the model below.

The model was then specified as:-

$$\text{OHS} = .657 + .471\text{LVF} - .230\text{DW} - .043\text{CTF} + .034\text{PPE} - .022\text{FA} + .272\text{GH} + .150\text{FP} \dots \text{Eq 1.0}$$

Where;

OHS = Occupational Health and Safety

LVF = Lighting and Ventilation

DW = Drinking water and sanitary facilities

CTF = Chairs/tables and facilities for sitting

FA = First Aid kit and medical facility

GH = Good house keeping

FP = Fire Prevention and protection

PPE = Personal protective equipments

ε = error term

As the fire prevention and protection, lighting and ventilation, personal protective equipment's and good house keeping increases, the productivity of employee's increases. However, as the chairs/tables and facilities for sitting, first aid kit and medical facility and drinking water and sanitary facilities increases, the productivity of employees will reduce.

The β values show the degree that each occupational health and safety practices influence employee productivity when the effects of the other independent variables

are held constant. Each beta values has associated Standard Error(S.E) indicating to what extent these values would vary across different samples and also it is used to determine whether or not b values differs significantly from zero. The t test was used as a measure to identify whether the predictors were making a significant contribution to the model. The smaller the value of significance (the larger the value of t), the greater is the contributor of that predictor.

From the model, the lighting and ventilation ($t = 3.25, p < .05$), drinking water and sanitary facilities ($t = -1.49, p > .05$), chairs/tables and facilities for sitting ($t = -.385, p > .05$), personal protective equipment's ($t = .252, p > .05$), first aid kit and medical facility ($t = -.172, p < .05$), good house keeping ($t = 1.98, p < .05$) and fire prevention and protection ($t = 1.20, p > .05$). From the study it shows that not all the predictors of employee's productivity in sugar industry were significant except lighting and ventilation and good house keeping. This could mean that as more lighting and ventilation as well as good house keeping occupational health and safety practices are carried out within the industry the employee productivity is improved. The findings agree with the Health and Safety Executive (2006) that genuine productivity gains can be realized by those businesses that invest in high performance health and safety practices. When an organization is committed to OHS best practice and implements it in a properly managed manner, the result is a win-win situation that benefits both the workforce and the organization for which they work. There is need for a workplace improvement in terms of occupational health and safety for the benefit of the employer and the employee in order to increase productivity. A healthy employee will not only be efficient and effective but also motivated to work and perform to the expectation of the organization.

Table 4.15 Coefficients of Employee Productivity

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.657	.132		4.984	.000		
Lighting and Ventilation	.471	.144	.454	3.265	.001	.202	4.942
Drinking water and sanitary facilities	-.230	.155	-.225	-1.488	.139	.171	5.834
Chairs/tables and facilities for sitting	-.043	.113	-.048	-.385	.701	.254	3.932
Personal protective equipments	.034	.136	.036	.252	.801	.197	5.080
First Aid kit and medical facility	-.022	.130	-.021	-.172	.863	.270	3.702
Good house keeping	.272	.137	.292	1.978	.050	.179	5.597
Fire Prevention and protection	.150	.125	.169	1.195	.234	.195	5.121

a. Dependent Variable: Employee productivity

Source (survey data, 2011)

The coefficients for each of the variables indicates the amount of change one could expect in employee productivity, given a one-unit change in the value of that variable, given that all other variables in the model are held constant. The constant is .657 and this is the predicted value when all the independent variables equals zero as shown in table 4.16. The unstandardized regression coefficient for lighting and ventilation is .471, meaning that for a one unit increase in lighting and ventilation; we would expect a .471unit increase in employee productivity. A decrease of .230 in the employee productivity was identified for every one unit increase in drinking water and sanitary facilities, assuming that all other variables in the model are held constant. A one-unit increase in chairs/tables and facilities for sitting would yield a .043 unit decrease in the predicted employee productivity. A one-unit increase in personal protective equipments would yield a .034 unit increase in the predicted employee productivity. A one-unit increase in first aid kit and medical facility would yield a .022 -unit decrease in the predicted employee productivity. A one-unit increase in fire prevention and protection would yield a .150 unit increase in the predicted employee productivity.

The standardized regression coefficients were used to compare the relative strength of the various predictors within the model. Because the beta coefficients are all measured in standard deviations, instead of the units of the variables, they can be compared to one another. The beta coefficients are the coefficients that would be obtained if the outcome and predictor variables were all transformed to standard scores, before running the regression. From the study lighting and ventilation had the largest Beta coefficient, .454, and first aid kit and medical facility has the smallest Beta, .021. Thus, a one standard deviation increase in lighting and ventilation leads to

a .454 standard deviation increase in predicted employee productivity, with the other variables held constant and a one standard deviation increase in first aid kit and medical facility, leads to .020 standard deviation increases in employee productivity with the other variables in the model held constant. To test whether there was collinearity, tests were carried out using tolerance and Variance Inflation Factor (VIF) statistics. For this model, VIF values are all below 10 and tolerance statistics are all well above 0.2 and we can conclude that there is no Collinearity within our data (Bower man & O'Connell, 1990).

From the findings it showed that occupational health and safety practices that had positive relationship with productivity of employees include; fire prevention and protection, lighting and ventilation, personal protective equipments and good house keeping, while chairs/tables and facilities for sitting, first aid kit and medical facility and drinking water and sanitary facilities had negative relationship. Thus we can conclude that occupational health and safety practices have both positive and negative influence on employee productivity.

The findings agree with Managing Health and Safety Journal (2001) that an employee's safety and health practice influences all the activities including selection of employees, equipment and materials, the way work is done and designed and provide goods and services. Furthermore it concurs with Chabra (2005) that occupational safety has an important influence particularly in hazardous industries. De Greef (2003) argues that OSH measures have important implications on company profitability by affecting revenue and production costs. These will result to decrease of the production costs and increase in revenue.

Lukkonen *et al* (1996) assessed the cost and benefits to organizations of stress prevention in the workplace and found that stress prevention presents a means whereby an organization cannot only reduce or contain the cost of employee health but also positively maintain and improve organizational health and productivity.

According to Dorman (2000) most organizations do not quantify the cost incurred as a result of poor working environment, ill-health and cost of accidents all these translate to loss of profitability to the organization poor productivity by employees. Dorman therefore argues that there is need to integrate occupational and safety with other variables so as to cut down cost and increase productivity level.

The findings of the study agree with Brandt-Rauf *et al.*, (2001) between productivity and employees' overall health and safety that there is need for more innovative ways to reduce the high rates of workplace injury and illness. The pressure to reduce the social and economic costs of injury and illness, particularly compensation costs. Need to improve labour productivity without employees needing to work longer hours and/or taking on more work and need to offer good working conditions as an enticement to recruit and retain skilled workers in a tight labour market.

CHAPTER FIVE

SUMMARY OF THE FINDINGS CONCLUSION AND RECOMMENDATIONS

5.0 Overview

The chapter presents the summary of the finding, conclusion and recommendations.

5.1 Summary of the Findings

The findings of the study were summarized according to the research objectives.

5.1.1 The occupational health and safety practices which are currently used in Mumias Sugar Company

From the study majority of the employees agreed that the OHS practices are operational in Mumias Sugar Company. This was in conformity with the Health and Safety Executive (2006) that genuine productivity gains can be realized by those businesses that invest in high performance health and safety practices. When an organization is committed to OHS best practice and implements it in a properly managed manner, the result is a win-win situation that benefits both the workforce and the organization for which they work. There is need for a workplace improvement in terms of occupational health and safety for the benefit of the employer and the employee in order to increase productivity.

The findings of the study concurs with Robbins (2003) who suggested that effective workplace health and safety practices can help to save the lives of workers by reducing hazards and their consequences. Health and safety programmes also have positive effects on both worker morale and productivity.

5.1.2 The influence of occupational health and safety on productivity

The results of the study showed that the Multiple Regression $R^2 = .812$ indicating that all the occupational health and safety practices in the model account for 81.2% variation in the employee productivity in Mumias Sugar Company. The occupational health and safety practices which had positive relationship with productivity of employees include; fire prevention and protection, lighting and ventilation, personal protective equipment's and good house keeping, while chairs/tables and facilities for sitting, first aid kit and medical facility and drinking water and sanitary facilities had negative relationship.

When an organization fully implements occupational health and safety practices employees' productivity improves. It was also realized that absence of occupational health and safety practices could easily lead to issues such as absenteeism, high employee turnover, increased medical bill and insurance claim, injuries and frequent accidents. This concurs with Dorman (2000) who argues that there is need for organizations to integrate OHS with other variables so as to cut down costs and increase productivity levels.

5.1.3 Challenges facing implementation of OHS practices

The findings showed that failure to involve employees in the program of occupational health and safety, rapid change in technology and HIV/TB epidemic stands as a challenge facing occupational health and safety practices at Mumias sugar. There were also other challenges that the respondents agreed there were employee negative attitude, high cost of training, government policy, and high cost of OHS equipment's. The employees cited that it could be good if every employee is involved in the

implementation of OHS in the organization. The non managerial employees further indicated that in most cases they are the ones who need occupational health and safety equipment's most as they work in the factory plan as opposed to their managerial counterparts.

The non managerial employees further revealed that the management in most cases mind the output but ignore there safety in the factory, citing that when there is a drop in output they will put the blame on the employees they do not want to see the cause of the problem like hazardous work environment. Management on their part cited that the government may interfere with their occupational health and safety program as they may come up with their own schedule and training programs which may not go hand in hand with the organizational programs and schedule. They further defended their policy that they involve all the employees as they train supervisor who will then train the non managerial employees and also indicated that they also take a section of non managerial employees and train in their workshops. During the interview scheduled the Top management pointed out the fact that most employees go against the rules that guards against the OHS practices and even work in the factory without protective gear. This also concur with the views of Cole (2002) were he cites that employee are an impairment to implementation of OHS due to their attitude towards the personal protective gear.

5.1.4 Appropriate techniques of implementing occupational health and safety practices in the organization

From the study majority of the employees agree that the appropriate techniques of OHS implementation were involving top management, having a fair budgeting that is

appropriate, and frequent training on OHS practices. However involving employees on decision making, peer education and sensitization, setting of rules and regulation on OHS practices and establishing OHS committee to oversee implementation were appropriate techniques.

This agrees with Towers (2003) who explained that it is important to empower, educate and persuade workers to exercise their powers in the protection of their OHS. Eve (1993) argues that the most effective methods of safety and health practices are by applying good management techniques. Genuine commitments to OHS practices by the management are likely to be effective and efficient throughout the rest of the organization. It is therefore the Managements responsibility to ensure workplace is free from unnecessary hazards and that conditions surrounding work place are not hazardous to employees' physical or mental health.

5.2 Conclusion

The fire prevention and protection, lighting and ventilation, personal protective equipment's and good house keeping occupational health and safety practices had positive relationship with productivity of employees. Whereas chairs/tables and facilities for sitting, first aid kit and medical facility and drinking water and sanitary facilities had negative relationship.

OHS in Mumias Sugar is fairly successful and its elements are designed well but others are not well designed though they are present. It was also realized that when OHS is fully implemented the organizational productivity goes up and there are some parameters or key productivity indicators which are like improved quality production,

high employee productivity, employee motivation, organizational profitability, increased units of output and employee efficiency and effectiveness.

The researcher also found out that when OHS is successfully implemented, there will be attraction and retention of workers, reduced accidents and injuries, reduced insurance costs and workman compensation, maximization of employee productivity, demonstrations of organizations social responsibility, improved corporate image was also cited by the respondents and reduced sick off and absenteeism.

Employee negative attitude, high cost of training, government policy, and high cost of OHS equipments which they cited that management should address. The appropriate techniques which management should adopt in implementing OHS are, top management fully involvement, fair budgeting that is by also budgeting for OHS, frequent training on OHS practices because of rapid change in technology involving employees on decision making which could be by asking the respondents in ways of making OHS successful, peer education and sensitization, setting rules and regulation on OHS practices and setting OHS committee to oversee implementation

5.3 Recommendation

From the findings and conclusions of the study it is recommended that;

The organization should make Occupational Health and Safety very successful as it is a pertinent in enhancing productivity and also safeguarding employees' health.

The employees should report to the authorities as the law states that it is the duty of employees to report any dangerous situation to the supervisor.

Machinery, equipments and other items purchased, designed, manufactured or installed for operations should conform to OHS protection requirements. All relevant information on new equipment's should be provided by the suppliers and manufacturers. Suppliers should guarantee safety of their supplies. Such information should reach the ultimate users of the machines and equipment.

The organization should conduct frequent training which if possible should be monthly to train employees on Occupational health and safety and every employee working in the organization should attend regardless of cadre or level of education so as to enhance its productivity.

The organization should receive training from organizations like The Kenya Red Cross, G4s security, AAR, ST John Ambulance and other organization on fire fighting, first aid and other elements of OHS because these organizations has tailor made training to employees working in different department.

Employees through their union should liaise with Central Organization of Trade Union to report any dangerous or unsafe working environment present in the organization to cut off occupational diseases and accidents in the organization.

The organization should set up aggressive and functional team which it will be concern with the occupational health and safety in the organization and they will be accountable to any occupational diseases, hazardous environment and safety equipments on the organization. This team should be drawn right from top management to non managerial employees.

Employees should be communicated to the importance of appreciating the use of personal protective gear so as to reduce occupational diseases and accidents in the organization. This is done better through training of peer educators from among themselves so that they will keep on training fellow employees and keep on persuading them.

5.4 Suggestion for Further Studies

This study presents significant findings Occupational Health and Safety practices on employee's productivity at Mumias sugar. However, there is still a lot of ground to be covered. The following suggestions for further research is made on effects of occupational health and safety on employee induction and retention in organizations.

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APPENDICES

APPENDIX A: QUESTIONNAIRE

This questionnaire is issued with the purpose of collecting individual responses on the Research topic “*Occupational Health and Safety Practices in Employee Productivity*” and as a requirement for the award of masters of philosophy degree in Human Resource Development of Moi University .All the views collected will be treated with confidentiality.

Instructions to the Participants

1. Do not write your name on any part of this questionnaire or indicate any personal details.
2. Please tick/fill in the Blank spaces as appropriate.

Section A:

Socio Economical and Personal Characteristics

1. What is your Gender?

Male Female

2. What is your age?

18 – 25	<input type="checkbox"/>
26 – 35	<input type="checkbox"/>
36 – 45	<input type="checkbox"/>
46 – 55	<input type="checkbox"/>
56 and above	<input type="checkbox"/>

3. What is your educational level?

O Level	<input type="checkbox"/>
A Level	<input type="checkbox"/>
Diploma	<input type="checkbox"/>
Degree	<input type="checkbox"/>
Masters	<input type="checkbox"/>

4. What is your marital status?

- Married
- Single
- Divorced
- Separated
- Widowed

5. What is your working experience in years in this organization?

- 1-5
- 6-10
- 11-15
- 16-20
- 21-25
- Over 26 yrs

Section B: Employee Productivity

6. Which of the following occupational health and safety practices are currently used in Mumias Sugar Company?

- Lighting and ventilation
- Drinking Water and Sanitary Facility
- Chairs/Tables and Facility for sitting
- Personal Protective Equipments
- First Aid Kit and medical Facility
- Good house Keeping
- Fire Prevention and Protection

Any other specify.....

7. Who are involved in the implementation of occupational healthy and safety practices in your organization? (Tick as appropriate)

Statement	Strongly agreed	Agree	Undecided	Disagree	Strongly disagree
Top management					
Middle level management					
Supervisors					
Subordinates					

8. How do you rate the implementation of occupational health and safety Practices in the organization?

Very successful

Fairly successful

Successful

Unsuccessful

9. What is your opinion on the elements of occupational health and safety practices? Are they designed well to suit your comfort during operations at work environment? (Please tick as appropriate)

Key: Strongly Agree-SA, Agree-A, Undecided-U, Disagree-D, Strongly Disagree-SD

Elements to be assessed	SA	A	U	D	SD
Lighting and ventilation					
Drinking Water and Sanitary Facility					
Chairs/Tables and Facility for sitting					
Personal Protective Equipments					
First Aid Kit and medical Facility					
Good house Keeping					
Fire Prevention and Protection					

10. In your opinion does the presence of occupational and health practices
Collectively contribute towards productivity? (Tick as appropriate)

Indicators of productivity	SA	A	U	D	SD
Improved Quality of Products					
High Performance by Employees					
Improved time management					
General Profitability					
Increased Units of Output					
Employee Efficiency and Effectiveness					

Section C:

Challenges faced in Implementing Occupational and Health Practices.

13. In your opinion what are the major challenges faced while implementing
Occupational, health and safety practices? Tick as appropriate.

Challenges	SA	A	U	D	SD
Failure to involve employees in implementation					
Rapid change in technology					
HIV/T B epidemic					
Employee negative attitude					
High cost of training					
Government policy					
High cost of OHS equipments					

SECTION D

14. What are your opinions on the appropriate techniques to implement Occupational Health and safety practices? Tick as appropriate.

Appropriate techniques.	SA	A	U	D	SD
Frequent training on OHS practices					
Fair Budgeting					
Top Managements Involvement					
Involving Employees in Decision Making					
Peer Education & Sensitization					
Rules And Regulation on OHS Practices.					
OHS committee to oversee implementation					

15. Please give any suggestion not included in the questionnaire

.....

.....

.....

Thank you for participating

APPENDIX B: INTERVIEW SCHEDULE FOR MANAGEMENT

1. What occupational health and safety practices are currently used in Mumias Sugar Company?
2. Who are involved in the implementation of occupational healthy and safety practices in your organization?
3. How do you rate the implementation of occupational health and safety practices in the organization?
4. What is your opinion on the elements of occupational health and safety practices?
5. In your opinion does the presence of occupational and health practice collectively contribute towards productivity?
6. In your opinion what are the major challenges faced while implementing occupational, health and safety practices?
7. What are your opinions on the appropriate techniques to implement Occupational Health and safety practices?

APPENDIX C: RESEARCH PERMIT


PAGE 2

THIS IS TO CERTIFY THAT:

Prof./ Dr./ Mr./ Mrs./ Miss.....MIRIAM.....
.....JELIMO SAWE.....
of (Address)MOI UNIVERSITY.....
.....P.O. BOX 3900, ELDORET.....
has been permitted to conduct research in
..... Location,
.....KAKAMEGA.....District,
.....WESTERN.....Province,
on the topic.....Integrating occupational
.....health and safety practices in
.....Employees' productivity in
.....Organisations;A case study of
.....Mumias Sugar Company.....
for a period ending.....31ST AUGUST....., 20..11..

PAGE 3

Research Permit No.....NCST/RRI/12/1/SS-011/290
Date of issue.....29/03/2011
Fee receivedSHS 1,000



[Signature]
Applicant's
Signature

[Signature]
Secretary
National Council for
Science and Technology