AN INVESTIGATION INTO FACTORS INFLUENCING OCCUPATIONAL SAFETY AND HEALTH INTERVENTION PROGRAMMES IN SELECTED MANUFACTURING FIRMS IN THIKA MUNICIPALITY.

By

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DECLARATION.

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

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DEDICATION.

This work is dedicated to my parents, Mr. Steve Abonyo and Mrs. Jane Akinyi Abonyo who taught me the value of discipline, diligence and determination, my siblings; Edgar, Brenda and Maurice. And above all, to the Almighty God for his love, guidance, faithfulness and provision to me throughout my academic life as well as other domains in my life.

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LIST OF ABBREVIATIONS AND ACRONYMS.

GDP	Gross Domestic Production.
ILO	International Labour Organization.
NGOs	Non-governmental Organizations.
OSH	Occupational Safety and Health.
OSHAct	Occupational Safety and Health Act.
SSPS	Statistical Package of Social Sciences.
WHO	World Health Organization.

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CHAPTER ONE.

INTRODUCTION.

1.1 BACKGROUND INFORMATION.

The current global labour force stands at about 2600 million and is growing continuously. Each year, another 40 million people join the labour force, most of them in developing countries (ILO 2000). Other than the home environment, the workplace is the setting in which many people spend the largest proportion of their time. Indeed, for many people, particularly in developing countries, the boundary between their home and workplace environment is blurred. Growth of the industrial activities has often been spurred by population growth and rapid urbanization, in combination with economic development and in parallel with larger, more conspicuous industrial development. (Bennett, 2000)

In favourable circumstances, work contributes to good health and economic achievements. However, the work environment exposes many workers to health hazards that contribute to injuries, respiratory diseases, cancer, musculoskeletal disorders, reproduction disorders, cardiovascular diseases, mental and neurological illnesses, eye damage and hearing loss, as well as to communicable diseases (HRMagazine, April, 1999).

Workplace fatalities, injuries and illnesses remain at acceptably high levels and involve an enormous and unnecessary health burden, suffering, and economic loss amounting to 4-5% of Gross Domestic Production (WHO, 2000). According to the latest ILO estimates for the year 2000 there are 2.1 million work-related deaths per year. World Health Organization estimates that there are only 10-15% of workers who have access to a basic standard of occupational health and safety services.

In rapidly industrializing countries occupational health and safety problems often arise due to use of technologies that are less advanced and more hazardous than those favoured by developed countries (ILO 2000). Moreover, managing all aspects of production –for

example, health and safety at work and the health of the work environment, as well as the external environment-can be difficult when technical and financial resources are limited, as is often the case. In such circumstances, occupational accidents, physical and ergonomic hazards, and occupational injuries diseases become major problems. Their true extent is unknown, however, since many occupational injuries and diseases are neither notified nor registered (WHO, 2000), Adjustment is therefore necessary. Making such adjustment, ILO and WHO estimate that there may be as many as 250 million occupational injuries each year, resulting in 220,000 fatalities. The estimates also state that 68-157 million new cases of occupational diseases may be caused by various exposures at work.

Due to the changes in occupational distribution with development, many countries have experienced a shift from the hazards that characterize work in agriculture, mining and other primary industries, to those of manufacturing and service industries (Bennett 2000). Following such a shift, occupational injuries and diseases could be expected to fall in number and the severity of those that do occur to be less. But, in fact, new occupational disease problems have emerged, leading to an increased incidences of reported occupational disease in certain countries (Hannaford, 2000). Historically, occupational health programmes have developed with attempts to improve the social conditions of undeserved and unprivileged occupation.

This study intended to investigate factors influencing the choice of occupational safety and health intervention programmes in manufacturing firms in Thika. It attempted to contribute to the body of knowledge on what is an under-reported issue so that countries, organizations and individuals embarking on Human Resources Management can maximize their chances of continuous improvement in occupational safety and health matters.

1.2 STATEMENT OF THE PROBLEM.

Conditions of work and the work environment may have either a positive or hazardous impact on health and well-being. According to the principles of the United Nations, WHO and ILO, every citizen of the world has a right to healthy and safe work and to a work environment that enables him or her to live a socially and economically productive life. Though less frequent, major industrial catastrophes may cause great health losses and the workers are often the first and most severely affected victims. In large-scale catastrophe the social, environmental and economic loss is great that it is almost impossible to calculate (Blake, 2001).

According to Nzuve (1997), many industrial catastrophes originate from technical failure, but human factors and the factors related to occupational health and the work environment often play a role. Predictive and preventive approaches, prominent among these are, equipment changes, safety committees, expanded medical facilities and staff, and a greater use of safety inspection systems, may substainlly reduce the potential for hazard in the workplace (Bricar and Hopkins, 1999).

But the big question is: "have these types of changes resulted in reduced illnesses, injury, and death in the workplace"? This is a highly debatable question. The problems include outdated safety standards, an inadequate number of inspections, lack of knowledge in the issue of occupational health and safety, small fines for violations, and inaccurate data reporting by employers. Criticisms like these suggest there are may be considerable room for improving the effectiveness of occupational safety and health programmes. This study intended to investigate factors that influence the choice Occupational Safety and Health intervention programmes in selected manufacturing firms in Thika municipality.

1.3 OBJECTIVES OF THE STUDY.

1.3.1 General objective.

To investigate factors that influence the choice of occupational safety and health intervention programmes in selected manufacturing firms in Thika municipality.

1.3.2 Specific objectives.

a) To investigate the effect and impact of facilities (protective clothing and apparel) offered to employees' on occupational safety and health.

b) To determine if the availability of training programmes influence occupational and safety programmes.

c) To establish if communication and publication programmes influence occupational safety and health programmes.

d) To investigate if the nature of the job carried out by employees' make them vulnerable to occupational illnesses, injuries and accidents.

e) To establish if the plant layout and design contribute to occupational illnesses, injuries and accidents.

1.4 RESEARCH QUESTIONS.

a) What effect does provision of protective clothing and apparel to employees influence occupational safety and health?

b) Does training and educating employees influence occupational safety and health programmes?

c) Does availability of communication and publication programmes influence occupational safety and health programmes?

d) To what extent does the nature of job carried out by employees' make them vulnerable to occupational illnesses, injuries and accidents?

e) Does the nature of the physical layout and equipment design impact on employees' occupational safety and health programme?

1.5 IMPORTANCE OF THE STUDY.

In spite of major efforts by international organizations, individual countries, enterprises, employers' and workers' unions and NGOs, many of the previous policy objectives on occupational health and safety are yet to be met (ILO 2000). Major occupational health and safety needs still prevail among global work force.

In addition, due to the rapid changes in economic structures, technologies and demography, new occupational health and safety needs have appeared and should be taken into consideration. In spite of the evidence noted above, the majority of the world's work force is still not served by competent occupational health and safety services. The priority of occupational health and safety should be elevated on both national and international social agendas and appropriate resources should be provided for strengthening occupational safety and health programmes.

The results and recommendations from this study will add to other studies carried out by other academicians and researchers in the field of study. Policy makers will also benefit from the new evidence, as they will be able improve the already existing policy. This will ensure a continuous follow-up and development of a healthy and safe working environment.

Management and employees at large will be sensitised and made aware of what to expect from each other, their rights and obligations as far as a safe and healthy workplace is concerned. The outcome of the study will also be able to identify predictive and preventive measures to help aviate causes of occupational illnesses, accidents and injuries.

The findings of the study will broaden the understanding of the general public in the area of a safe and healthy working place. Firms will also through the knowledge of how to design an effective Occupational health and safety programme, which in turn creates a positive corporate image through corporate social responsibility.

1.6 SCOPE OF THE STUDY.

The study focused on an investigation to the factors that influence the choice of occupational health and safety intervention programmes in selected manufacturing firms in Thika municipality. The sample comprised of 10 firms selected from a population of

30 firms in Thika municipality. A total of 93 respondents were targeted for the study that comprised of production supervisors and technical personnel at the production plant.

1.6.1 OPERATIONAL DEFINITION OF TERMS.

a) **Safety**: A condition or state of being resulting from the modification of human behaviour and/ or designing of the physical environment to reduce the possibility of hazards, thereby reducing accidents.
b) **Occupation**: A job or profession.
c) **Occupational accident**: An unintentional occurrence of physical damage to an object or an individual in the workplace.
d) **Occupational illness**: An abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment.
e) **Occupational injury**: Any injury that results from work-related accident or from exposure involving a single accident in the workplace.
f) **Occupational hazard**: A risk or danger connected with a particular job.
g) **Ergonomics**: How the workplace, job practices, and equipment design features interact to affect the well-being of employees.

CHAPTER TWO

LITERATURE REVIEW.

2.1 INTRODUCTION.

This section is a review of related literature on the concept of occupational safety and health, the conceptual framework, past studies done in the area, the factors that influence occupational safety and health intervention programmes, and empirical interventions that can be replicated.

2.2 PAST STUDIES DONE IN THE AREA.

The various hazards inherent in industrial occupations created by the so-called industrial revolution led gradually to the recognition of social responsibility for the welfare of employees by both employers and governmental agencies. The need for improving the lot of industrial workers provided an impetus for the development of an accident prevention doctrine that encompassed the principles of safe environment and safe behaviour that are found in current industrial safety and health programmes (Strasser et. al, 1999).

With the evolution of an industrially oriented society came many hazards to workers and a serious problem of industrial accidents. Legislation dealing with employee safety has in recent years become sufficiently realistic to provide a substantial measure of protection for the worker. Contributing factors in occupational accidents are basically unsafe physical conditions and unsafe personal acts. The organised safety program is concerned with providing a hazard-free environment and an on-going programme of education and supervision of employees to reduce accidental death and injury, reduce insurance and other accident-related costs, and sustain a high level of production (Bever, 1999).

2.2.1 The occupational safety and health; The concept.

The Williams-Steiger Act, better known as the Occupational Safety and Health Act, was signed into law on December 29, 1970. Many factors of the factors that contributed to the passage of the Act were:

a. A steadily rising workplace injury rate from 1961 to 1970.
b. A number of spectacular disasters, especially in mining.
c. Mounting research evidence linking the workplace with chronic diseases such as cancer and pneumoconiosis.
d. Better educated workers, who perceived the importance of safety in the workplace.
e. The national economic losses resulting from occupational illnesses, injury, and death.

From the turn of the century through the late 1960s, remarkable progress was made in reducing the rate and severity of job-related accidents and diseases. Yet the most significant piece of legislation is the area of employee health and safety was enacted until 1970 (De Cenzo & Robbins, 2000). Occupational Safety and Health Act set standards to ensure safe and healthful working conditions and provide stiff penalties for violators (ILO, 2000).

OSHAct legislation established comprehensive and specific standards, authorized inspections to ensure the standards are met, empowered the OSH administration to police organizations' compliance, and required employers to keep records of illnesses and injuries and calculate accident ratios (Pratt, 2000). Standards also exist for such diverse conditions as noise levels, air impurities, physical protection equipment, the height of toilet partitions, and the correct size of ladders (HRMagazine, April 1997).

According to the International Labour Organization (ILO), occupational health service is essentially preventive, promotive and responsible for advising the employer and employee and their representatives on health and environmental requirements for optimal health of workers and safe work environment. For the service to fulfil the above named role it has the following functions:

a. *Surveillance of the work environment* for the purposes of identifying the occupational hazards, assessment (working conditions, protective clothing,

exposure to hazards), supervising welfare facilities and advising on the impact of new technology on the health of workers.

b. *Surveillance of the health of workers* through medical examinations, pre-employment tests.
c. *Surveillance of the health and safety of vulnerable groups* i.e. women and young, old and the physically challenged.
d. *Information, education training and advice* by collecting and disseminating information, training programme development and health education campaign.
e. *Research on occupational health and safety.*
f. *Therapeutic programmes* through treatment of minor illnesses, immunization, management of accident victims and administration of first aid.
g. *Collaboration with other health and safety institutions,* both national and international.
h. *Proper record keeping on issues of occupational health and safety.*

2.2.2 Occupational Health and Safety situation in Kenya.

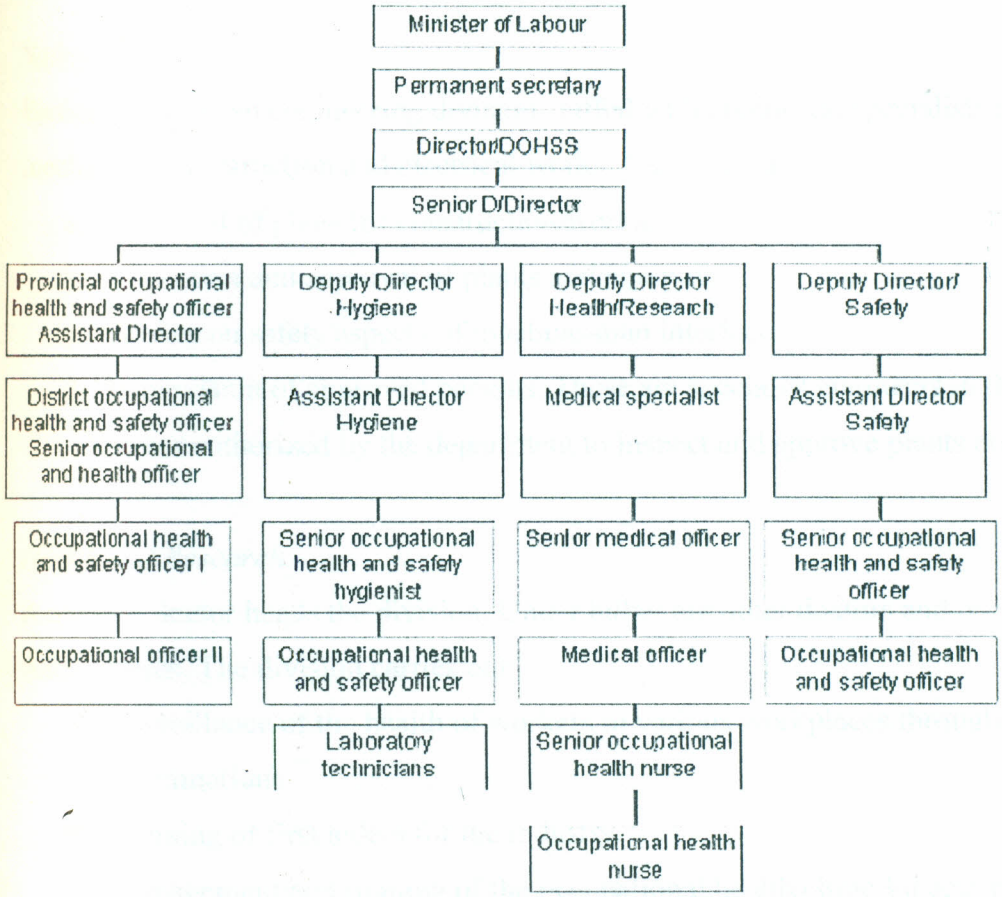
The Kenyan situation can be divided into two main sectors: the public or the government and private. In both cases occupational health and safety is established by law- The Factories and Other Places of Work Act Cap 514 of the Laws of Kenya and was amended in 1990. Occupational health and safety (OHS) in Kenya is established in the Ministry of Labour. It is carried out by the Directorate of Occupational Health and Safety Services (DOHSS).

The establishment.

The Director who is answerable to the Permanent secretary in the Ministry of Labour heads the Directorate of Occupational Health and Safety Services. The total number of staff posts is 177 out of whom 90 are professionals- Occupational Health and Safety Officers. Total establishment if fully staffed is 354 out of whom 240 are professionals. The staff is distributed in three specialized divisions, 7 Provincial Offices and 9 District

Offices. The specialized divisions include Occupational Health and Safety Research, Safety and Industrial Hygiene. These are only available at the headquarters in Nairobi.

Fig 2.1 *Organization of the Directorate of Occupational Health and Safety Services – DOHSS Kenya.*



Source: Kenya Newsletter (1999)

Duties of officers in the divisions within the Directorate of Occupational Health and Safety Services in Kenya.

Industrial hygiene.

An Industrial Hygienist heads the division. There are industrial hygienists three of who are stationed at the headquarters. The division carries out:

a. Assessment of the work environment for the purpose of identifying and quantifying the occupational hazards.
b. Advice to employers, employees and all the field offices on the right conditions of work environment.
c. Assessment of personal protective equipment.
d. Formulation of proposals for policy in industrial hygiene.

Safety.

Basically, this is an engineering division staffed with engineers; specialists in mechanical, construction and electrical works. It carries out:

a. Approval of plans for construction works.
b. Inspection and approval of plants and equipment.
c. Advice on safety aspects of machine-man interface.
d. Supervision of approved persons. These are specialist engineers in the private sector authorized by the department to inspect and approve plants and equipment.

Health and Research.

A medical doctor heads the division. Under hi/her are other doctors and occupational health nurses. The division carries out:

a. Surveillance of the health of workers in various workplaces through medical examinations.
b. Training of first aiders for the industry.
c. Management and running of the occupational health clinic for referral from industries.
d. Formulation of proposals of policy on occupational health.

Field Offices.

The field offices consist of provisional and district offices around the country. They are responsible for:

a. Enforcement of the Factories and Other Places of Work Act Cap 514 through systematic inspection of workplaces. The inspections cover health, safety and safety at workplaces.
b. Prosecution of contraveners of the Act.
c. Training and carrying out safety and health awareness seminars among employers and employees.
d. Advising the employers and employees on the right requirements for health and safety at workplace.

In the private sector, Law stipulates the establishment of occupational health and safety services. All workplaces employing 20 or more workers must have a health and safety committee. The functions of the committees are set and supervised by the Directorate of Occupational Health and Safety services. In establishing the occupational health and safety services, the private sector has two options:

a. A service that deals with all the health problems of the workers.
b. A service that deals only with occupational health problems of the workers.

The first option is the most commonly found and practised with the curative service being most prominent. All medium to large-scale industries have a form of health service. Mostly they have a part-time medical practitioner. Group occupational health services are being encouraged but have not taken root.

2.2.3 Communication and Publication.

Many accidents occur because workers are either unaware or temporarily forgetful of the dangers involved in various areas around the workplace. This prompted the Occupational Safety and Health Act to develop the Hazard Communication Standard in 1983, which became a responsibility of all industries. The standard requires the employee to communicate any hazards to their employees by labelling containers; all danger spots should be painted a distinguishing colour as warning signs. It also requires the utilisation

of safety literature, safety posters, bulletin-board displays, and presenting both current and new employees with safety rulebooks (De Cenzo and Robbins, 2000).

2.2.4 Personal protective Equipment and Apparel.

A fundamental approach to elimination of industrial accidents is to remove the environmental hazards. If this cannot be done, then the worker must be protected through the use of personal protective equipment. These are some of the protective equipment used in industry: hard-toe shoes, special gloves, hard hats and helmets, ear plugs, safety glasses, eye shields, face shield headgear, respirator with filter and overcoats. To provide maximum protection, the necessary equipment must be worn at all times. The general use of such equipment by workers has contributed materially to a reduction of seriously disabling occupational injuries (Simonds and Grinaldi, 1998).

2.2.5 Training and Education of personnel.

Safety training is an essential part of any accident prevention scheme, and should commence immediately a member of staff is employed. Organisations usually conduct safety training for both supervisors and employees (Williamson, 2000).

A typical program for supervisors includes such topics as safety rules and regulations, enforcement, safety control procedures, recognition of hazards, and disciplinary problems (Heinrich, 2000). As part of normal induction training, employees should be made aware of their responsibility for health and safety, general and special hazards, the use of safety clothing and equipment, and availability of medical services, safety rules and procedures for reporting accidents. After induction, further safety training does not, however, end at this point. Training is a continuous process (Florio and Stafford 1999).

Changes in technology may give rise to new hazards. Though programmes may vary from firm to firm, safety training generally involves three elements: (a) demonstrations of appropriate work methods, (b) observations and evaluations of workers performance, and

(c) follow-up, which may include either corrective measures to improve performance or positive reinforcement for a job safely done (Bever, 1999).

Strasser et.al, (1999) also notes that safety education consists of three elements: (a) knowledge creates an awareness of accident potential and problem areas. (b) attitudes enable a person to judge the potential value of making a behavioural change. (c) skill development allows the individual to consistently and safely performs an action under varying conditions.

Refresher training may prove necessary where standards within a particular work group appear unsatisfactory. Further general training, e.g., lifting and handling, may also be considered worthwhile. Not surprisingly, the more successful of such schemes appear to be group based and require some degree of active employee participation (Pratt and Bennett, 1999).

2.2.6 Physical plant layout and Equipment design.

Proper design of the workplace and equipment used in it not only reduces the incidence of illnesses and injuries; it also gives employees a sense of confidence and security. Equipment should be designed so that it will make it difficult for a worker to be exposed to danger (Bever, 1999).

Within every plant, large and small, certain physical attributes determine a safe work environment. For the most part these may be identified as ***building and ground conditions***, which include floors, walls, ceilings, exits, stairs, walkways, ramps, platforms, driveways and aisles. Other physical attributes are ***housekeeping programs*** such as waste disposal, leakage and spillage, cleaning methods, work areas and storage areas. ***Heating and ventilating*** attributes are temperature, humidity, natural and artificial ventilation and exhausting. ***Lighting system*** involves intensity, location, and glares and shadow control. ***Electricity equipment*** attributes are switches, breakers, fuses, switch boxes, special fixtures, circuits, and insulation (Florio and Stafford, 1999). Good

standards of heating, lighting, ventilation and housekeeping are all important in helping to eliminate occupational accidents and injuries.

2.2.7 Nature of the occupation.

Though certain occupations present a greater degree of danger in terms of illness or injury, almost every job has a particular number of hazards with which it is associated. According to National Institute for Occupational Safety and Health Hazard Evaluations (HRMagazine, April 2002), blue-collar job workers (operatives, labourers, and craft workers) account for the majority of injuries. They make up to 40 percent of the workforce, but have 77 percent of the work-related illnesses and injuries. White-collar workers (professionals, technicians, and salespersons, on the other hand, make up to 48 percent of employment, but account for only 12 percent of the illnesses and injuries. The other group, service workers (educational, hospital, and food service personnel) account for 12 percent of the labour force and 11 per cent of work-related illnesses and injuries.

2.3 CRITICAL REVIEW OF THE MAJOR ISSUES.

Unhealthy work environments are a concern to us all. If workers cannot function properly at their jobs because of constant headaches, watering eyes, breathing difficulties, or fear of exposure to material that may cause long-term health problems, productivity will decrease. Consequently, creating a healthy environment not only is the proper thing to do; it also benefits the employer.

The cause of an accident can accident can be generally classified as either human or environmental (Nzuve, 1997). Human factors are directly attributable to human error brought about by carelessness, intoxication, daydreaming, inability to do the job, or other human deficiency. Environmental or technical factors, in contrast, are attributable to the workplace and include the tools, equipment, physical plant, and general work environment. Both of these sources are important, but in terms of numbers, the human factor is responsible for the vast majority of accidents.

Cost of inadequate health and safety measures.

Direct costs	***Indirect costs.***
Employee's liability and public liability claims.	Business interruption.
Damage to buildings.	Product liability.
Damage to vehicles.	Investigation costs.
Repairs.	Loss of corporate image.
Sick pay.	

2.3.1 Developing a Safety and Health Program.

a) *Involve management and employees in the development of safety and health plan.* If neither group can see the usefulness, and the benefit of such a plan, even the best plan will fail. Many studies have investigated the role and effectiveness of top management in safety and health programmes and accidents reductions. The results of these studies clearly and consistently that top management commitment to, and active involvement in safety programmes is crucial to program effectiveness.

b) *Holding someone accountable for implementing the plan i.e. safety committee.* Plans do not work by themselves. They need someone to champion the cause. This person must be given the resources to put the plan in place, but also must be held accountable for what it's intended to accomplish.

c) *Determine the Safety and Health requirements for your work site.* Understand the specific needs of the facility will aid in determining what safety and health requirement will be necessary.

d) *Assess what workplace hazards exist in the facility.* Identify the potential health and safety problems that may exist on the job. By understanding what exists, preventive measures can be determined.

e) *Correct hazards that exist.* If certain hazards were identified in the investigation in Step 4, fix or eliminate them. This may mean decreasing the effect of the hazard, or controlling it through other means e.g., protective apparel and devices).

f) *Continuously update and refine the safety and health programmes.* Once the programme has been implemented, it must continuously be evaluated, and changes must be made. Documenting the progress of the programme is necessary for use in this analysis.

Source: Adapted from Maryland Occupational Safety and Health, *Developing a Workplace Safety and Health Program* (Baltimore; Maryland Occupational Safety and Health Agency, 1993).

2.3.2 Suggestions for keeping the workplace healthy.

a) Make sure workers get enough fresh air. One simple tactic: unsealing vents closed in overzealous efforts to conserve energy.
b) Avoid suspect building materials and furnishings.
c) Test new buildings for toxins before occupancy. Failure to do so may lead to potential health problems. Most consultants' say that letting a new building sit temporarily vacant allows the worst fumes to dissipate.
d) Provide a smoke-free environment. Establish an area for smokers that has its own ventilation system.
e) Keep air ducts clean and dry.
f) Pay attention to workers' complaints. Dates and particulars should be recorded by designated employee.

Source: Faye Rice, "*Do You Work in a Sick Building*?" (Fortune July 2, 1990).

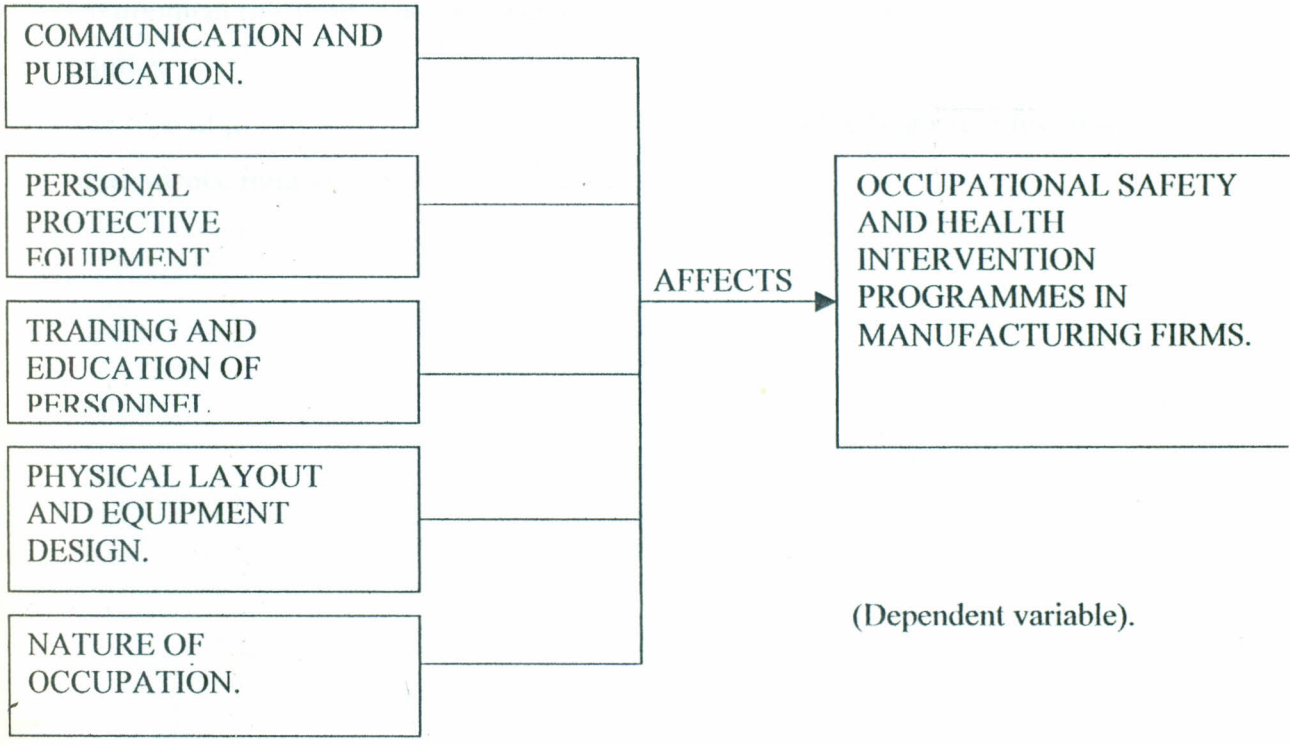
2.4 SUMMARY AND GAPS TO BE FILLED BY THE STUDY.

No matter how much effort is made to create a work environment that is accident-free, a low accident rate record can only achieved by concentrating on the human element (Harbrech, 1999). From the literature review, research done seems to dwell on the fact that it is mostly human factors that contribute to occupational safety and health injuries

and illnesses. The research at hand established the extent to which environmental or technical factors influence occupational safety and health intervention programmes in selected manufacturing firms in Thika.

2.5 THE CONCEPTUAL FRAMEWORK.

Fig.2.2 CONCEPTUAL FRAME WORK.



(Dependent variable).

(Independent variables)

Source: Author (2005).

2.5.1 Variables relationship.

The model of the study is determined in the *figure 2.1*. It touches on dependent variables communication and publication, facilities offered, training and development of personnel, physical layout and equipment design and nature of occupation. The independent variable is occupational safety and health intervention programmes in manufacturing firms.

- In cases where there is less communication and publication, cases of occupational health and safety especially accidents and injuries are high.
- Incidences of accidents and injuries also increase if employees are not offered with personal protective equipment and apparel.
- Training and education of personnel in the issue of a safe and healthy working environment greatly reduces the rate of occupational accidents, illnesses and injuries.
- Unsafe physical layout and equipment design also creates a hazardous work environment resulting to an increase in occupational accident, illnesses and injuries.
- The type of job an individual does can either expose him/her to great or less risk of accidents, injuries or illnesses in the workplace.

CHAPTER THREE.
RESEARCH METHODOLOGY.

3.0 INTRODUCTION.

This chapter gives a preamble to the methodology to be adopted and used in this study. It describes the study design, target population, sample design, data collection procedure (instruments) and data analysis method.

3.1 STUDY DESIGN.

A descriptive research design was used in this study. Gay (1983) defines descriptive research as a process of collecting data in order to test hypotheses or to answer questions concerning the current status of the subjects in the study. Mugenda and Mugenda (2003), add that the purpose of this type of research is to determine and report the way things are.

This design is considered appropriate due to its description of the state of affairs as it exists at present and that the researcher can only report what has happened and what is happening as pertains occupational safety and health in manufacturing firms in Thika municipality.

3.2 TARGET POPULATION.

The population of interest comprised of 30 manufacturing industries within Thika municipality. The respondents consisted of production supervisors and technical personnel from each of the 10 selected manufacturing firms in Thika municipality. A total of 93 respondents were used to collect data concerning the study. The researcher targeted this population because it is in their departments that the actual production of products from the plant takes place.

Table 3.1 Indicates the target population.

Firm.	Number of Supervisors.	Number of Technical Personnel.	Population Frequency.	Percentage of total population.
Bidco.	5	30	35	12
B A T.	6	27	33	11
Polysack.	3	17	20	6
Broadways.	7	25	32	11
K V M.	15	26	41	14
United Textiles.	2	21	23	8
Ready Timber.	5	25	30	10
CARNAUD Metal Box.	2	18	20	6
CIRIO Del Monte.	10	32	42	14
Mac Nee Millers.	6	18	24	8
	61.	**239.**	**300.**	**100.**

Source: Author (2005).

3.3 SAMPLE DESIGN.

The researcher was used systematic random sampling to select the manufacturing firms. According to Mugenda (1999), every Kth case in the population frame is selected for inclusion in the sample. To obtain a truly random sample using this method, the list of all the firms in the sample frame must be randomised. A list that is arranged in alphabetical or numerical order is not random. From the list of the firm, the researcher started the first random pick at the second firm as shown in Appendix III.

The research used purposive sampling procedure to select the respondents. This method was used because the subjects are informative in the field of interest. The technical

personnel on the other hand were chosen randomly at their work sites. A total of 21 production supervisors and 72 technical personnel were used in the study.

Table 3.2 Indicates sample size for Production Supervisors.

Firm	No. of production supervisors	Ratio.	Sample Size.
Bidco.	5	0.3	2
B A T.	6	0.3	2
Polysack.	3	0.3	1
Broadways.	7	0.3	2
K V M.	15	0.3	5
United Textiles.	2	0.3	1
Ready Timber.	5	0.3	2
CARNAUD Metal Box.	2	0.3	1
CIRIO Del Monte.	10	0.3	3
Mac Nee Millers.	6	0.3	2
	61		**21**

Source: Author (2005).

Table 3.3 Indicates sample size for Technical Personnel.

Firm	No. of technical personnel.	Ratio.	Sample Size.
Bidco.	30	0.3	9
B A T.	27	0.3	8
Polysack.	17	0.3	5
Broadways.	25	0.3	8

K V M.	26	0.3	8
United Textiles.	21	0.3	6
Ready Timber.	25	0.3	8
CARNAUD Metal Box.	18	0.3	5
CIRIO Del Monte.	32	0.3	10
Mac Nee Millers.	18	0.3	5
	239		**72**

Source: Author (2005).

3.4 DATA COLLECTION PROCEDURE/INSTRUMENTS.

The instruments for data collection in this research were the researcher-administered questionnaire, direct observation and interviews.

The main tool was questionnaire, which mainly consisted of open-ended questions and a few closed –ended questions. Researcher- administered questionnaire method has several advantages, which includes its ability to reach all respondents and are economical to use in terms of money and time. Secondary data will also be used especially to determine issues concerning variable relations.

3.5 DATA ANALYSIS.

The data collected was analysed using descriptive statistics, which include tabulation, cross tabulation, proportions, frequency tables, mean, mode and percentages. Statistical tools especially SPSS and excel will be used to present and analyse the specific issue.

CHAPTER FOUR.

DATA ANALYSIS AND INTERPRETATION.

4.1 INTRODUCTION.

This chapter presents the results of the data collected and further discuses these findings. It is divided into quantitative and qualitative analysis corresponding with the sections found in the questionnaire. The tables and figures in this chapter are derived from the findings in the study.

4.2 QUANTITATIVE ANALYSIS.

4.2.1 Knowledge of Occupational Safety and Health.

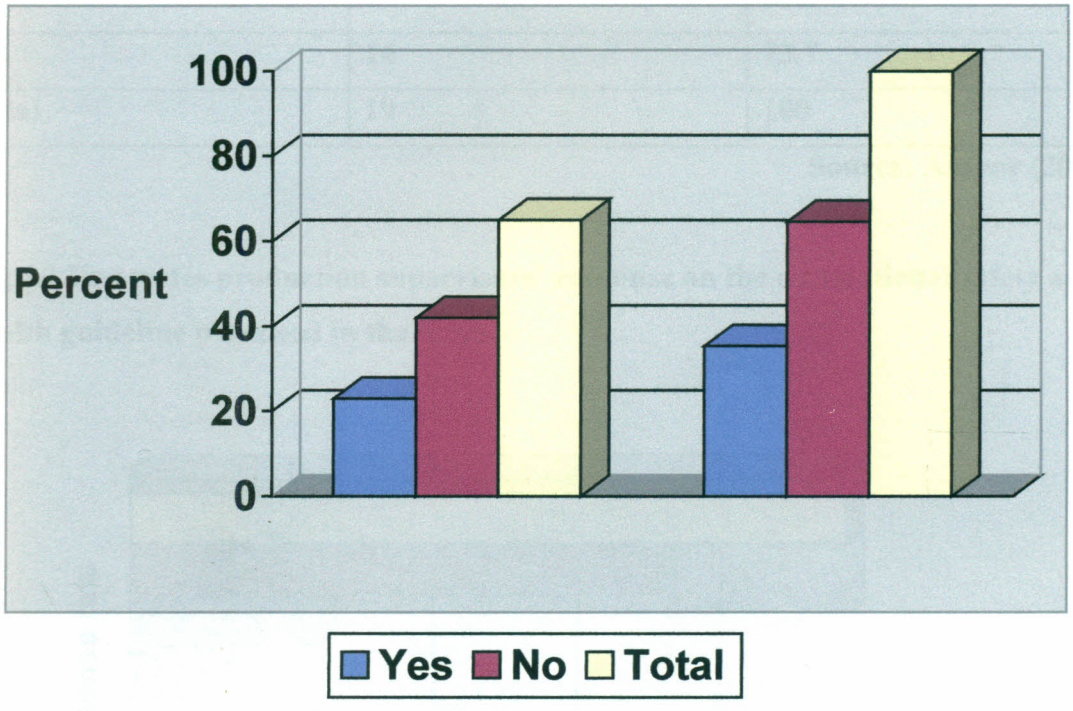
In this section the research focussed on the actual knowledge of occupational safety and health. The results in table 4.1 shows that 35.4% of employees have the knowledge on the issue of occupational safety and health while 64.6% said they did not have the knowledge of occupational safety and health. The employees however said that the knowledge was just on paper but was not practised in the workstation. Most of the firms were still in the process of implementing an Occupational Safety and Health committee.

Table 4.1 Response from employees on the knowledge of Occupational Safety and Health.

Response	Population Frequency	Percentage
Yes	23	35.4
No	42	64.6
Total	65	100

Source: Author (2005)

Fig 4.1 Shows in percentage the response rate of employees on the knowledge of occupational safety and health.



Source: Author (2005)

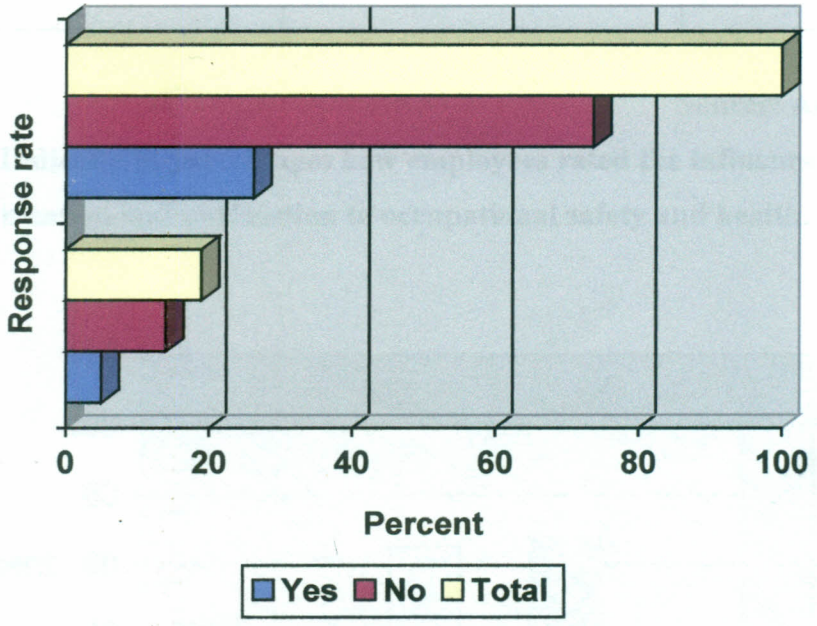
73.7% of the production supervisors interviewed that the firms they work for had no defined guidelines on occupational safety and health. Provision of protective clothing and apparel and education, nature of occupation and training of personnel on issues of occupational safety and health received with the supervisors agreeing that such guidelines are vital for a safe working environment. The publication and communication of hazards prevention measures and the physical layout received same rate of response. 26.3% of the respondents agreed that they have the guidelines and were actually being practised. Respondents from such firms attributed this to top management support and part of their human resource practice.

Table 4.2 Shows in rate of response if guidelines of OSH are practiced in the firms.

Response	Population Frequency	Percentage
Yes	5	26.3
No	14	73.7
Total	19	100

Source: Author (2005)

Fig 4.2 Illustrates production supervisors' response on the occupational safety and health guideline practised in the firms.



Source: Author (2005)

4.2.2 Communication and Publication of hazard prevention measures.

Table 4.3 shows the level of importance employees give to communication and publication of hazard prevention measures. Majority of the respondents (68%) agrees that such guideline very greatly reduces the levels of occupational injuries, illnesses and accidents. Those who had their firms publish and communicate hazards prevention

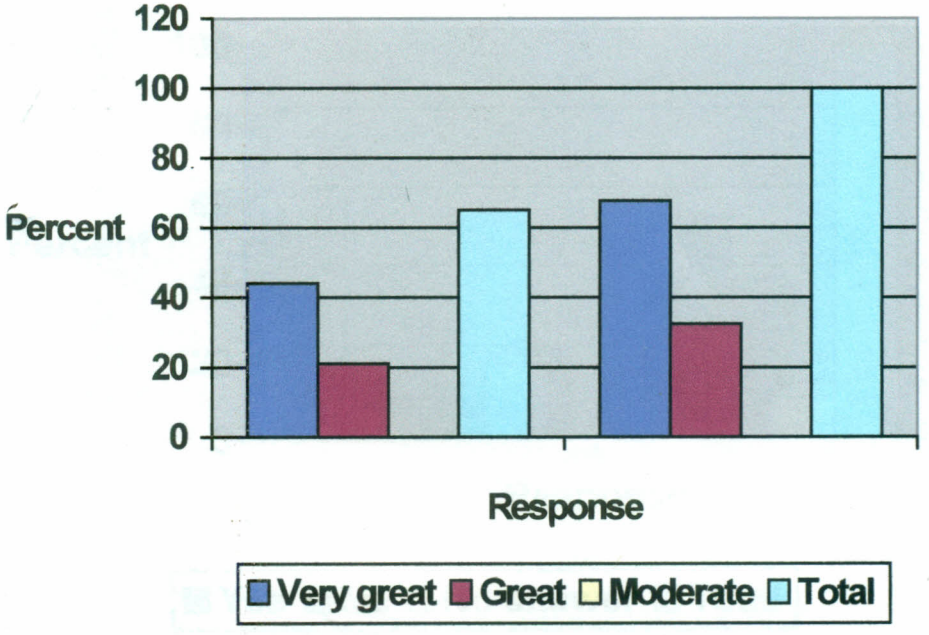
measures said the most appropriate methods were colour codes 60%, safety posters 53% and bulletin board 35%. Safety rulebooks and safety columns received a response 21% and 14% respectively.

Table 4.3 Response from employees on communication and publication of hazard prevention measures.

Response	Population Frequency	Percentage
Very great	44	67.7
Great	21	32.3
Moderate	0	0
Total	65	100

Source: Author (2005)

Fig 4.3 Indicates in percentages how employees rated the influence of communication and publication to occupational safety and health.



Source: Author (2005)

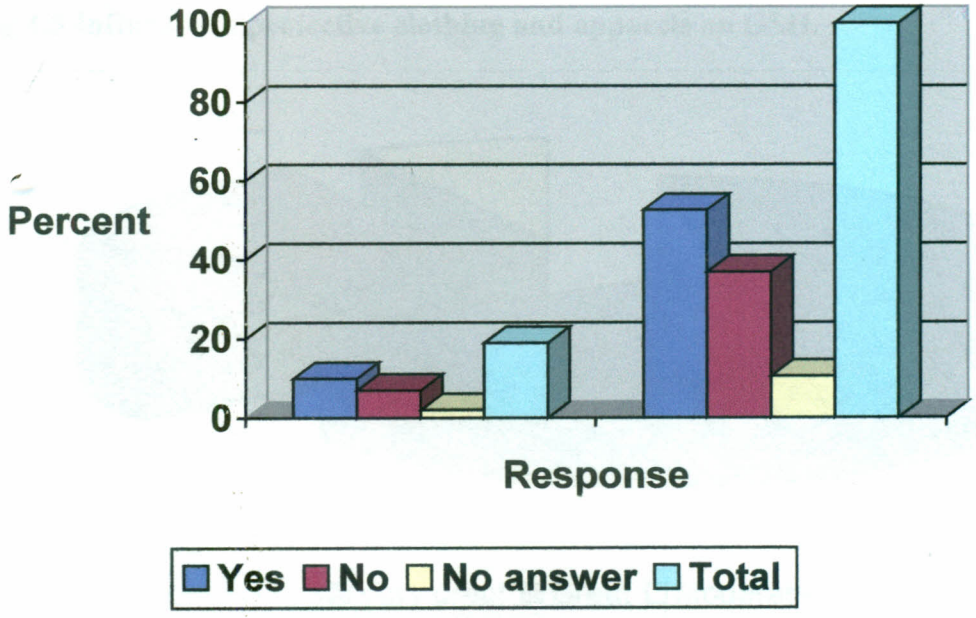
More production supervisors (52.6%) agreed communicating and publishing hazard prevention measure influenced occupational safety and health. 36.9% of the respondents said such a guideline had no influence on work safety while 10.5% left the question unanswered.

Table 4.4 Shows the level of importance production supervisors assign to communication and publication of hazard prevention measures.

Response	Population Frequency	Percentage
Yes	10	52.6
No	7	36.9
No answer	2	10.5
Total	19	100

Source: Author (2005)

Fig 4.4 Influence of communication and publication on occupational safety and health.



Source: Author (2005)

4.2.3 Provision of protective clothing and apparel.

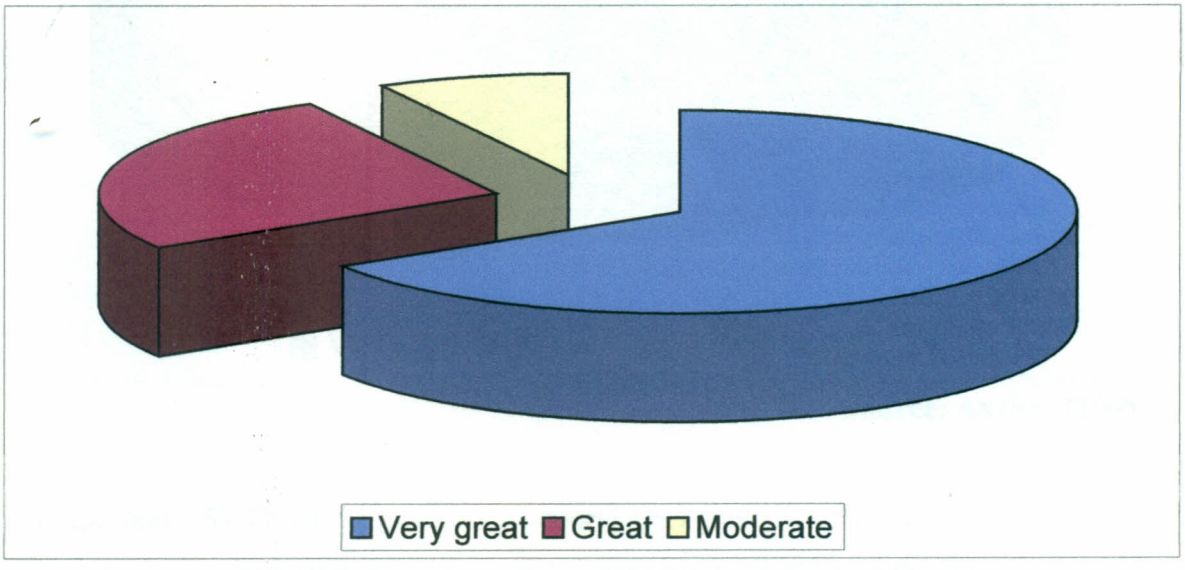
Provision of protective clothing and apparel as a variable influence occupational safety and health. Majority of the respondents (66.1%) agree that with such a guideline the level of occupational accidents very greatly reduces while 26.2% the reduction is great. 7.7% agreed with moderate reduction of occupational accidents All the respondents however said that the provision of protective clothing and equipment is greatly influenced by the support from the management. They also agreed that replacement of worn out clothing and equipment is also important if accidents and injuries ire to be reduced.

Table 4.5 Employees response on the importance protective clothing and apparel provision in the prevention of occupational injuries and accidents.

Response	Population Frequency	Percentage
Very great	43	66.1
Great	17	26.2
Moderate	5	7.7
Total	65	100

Source: Author (2005)

Fig 4.5 Influence of protective clothing and apparels on OSH.



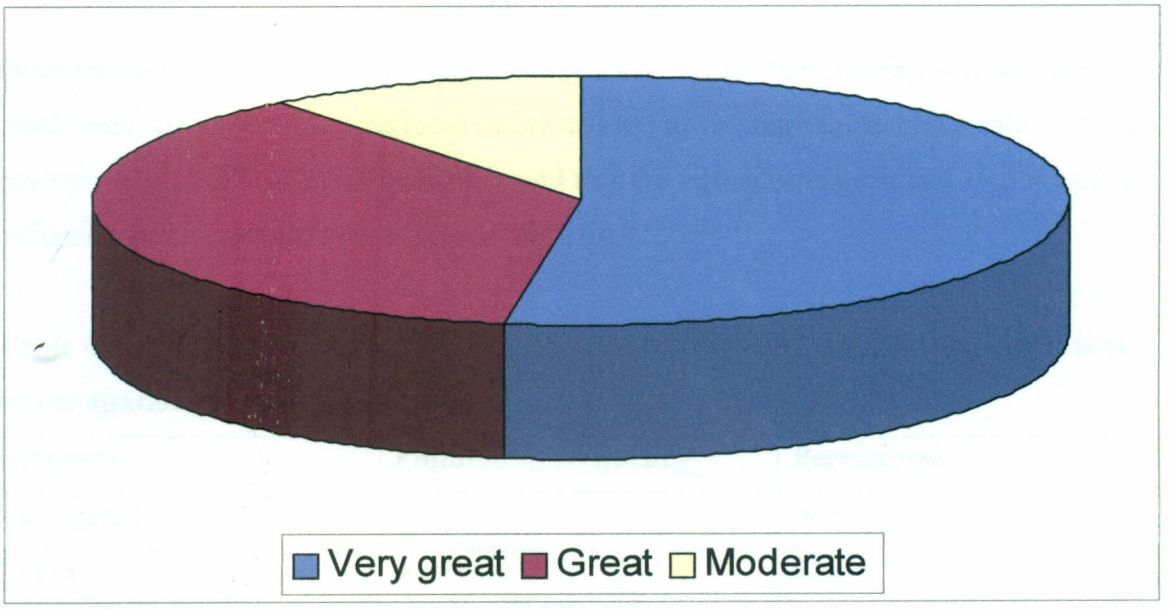
Source: Author (2005)

Table 4.6 Production supervisors response on importance of provision on protective clothing and apparel.

Response	Population frequency	Percentage
Very great	10	52.7
Great	7	36.8
Moderate	2	10.5
Low	0	0
Very low	0	0
Total	19	100

Source: Author (2005)

Fig 4.6 Illustrates the ratings production supervisor assigned to protective apparel and equipment on the influence of OSH.



Source: Author (2005)

From the study, 52.7% of the production supervisors agreed that the influence that provision of protective clothing and apparel is very great, 36.8% said the influence is great and 10.5% moderate. This is shown in table 4.8.

4.2.4 Training and education on occupational safety and health.

From the study, 33.8% of the employees said they were trained on occupational safety and health issues only when hired 61.5% annually and 4.6% have never been trained.

Table 4.7 Shows when employees are trained and educated on occupational safety and health.

Response	Population frequency	Percentage
When hired	22	33.8
Annually	40	61.5
Once a month	0	0
Never	3	4.6
Total	65	100

Source: Author (2005)

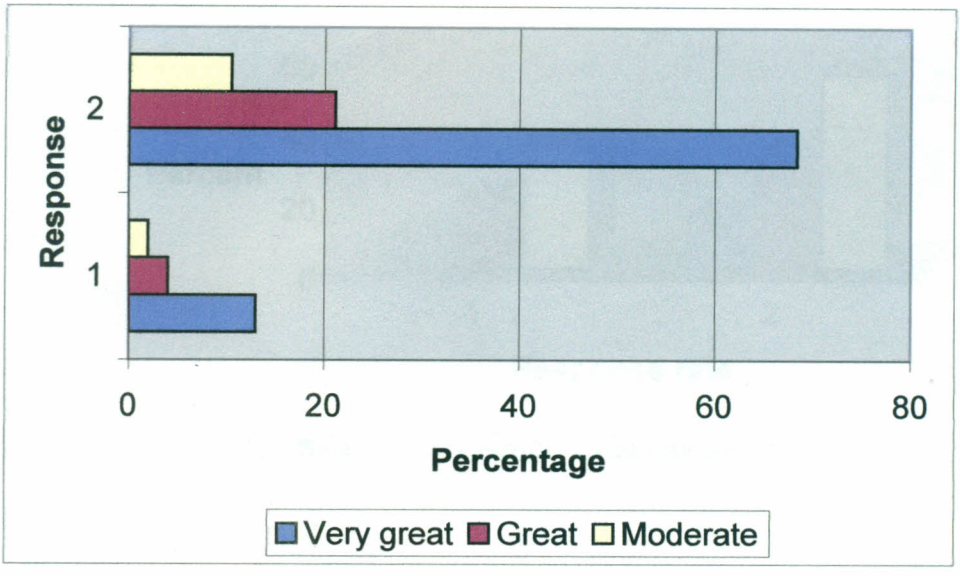
From the study, majority of the supervisors (68.4%) agreed that training and educating employees on issues of occupational safety and has a very high impact on a safe working environment. 21.1% of the respondents said that the influence is great and 10.5% said the influence was moderate. This is presented in fig.4.7.

Table 4.8 Production supervisors' response on influence of training and education on occupational safety and health.

Response	Population frequency	Percentage
Very great	13	68.4
Great	4	21.1
Moderate	2	10.5
Low	0	0
Very low	0	0
Total	19	100

Source: Author (2005)

Fig 4.7 Influence on training and education on occupational safety and health.



Source: Author (2005)

4.2.5 Influence of physical layout on occupational safety and health.

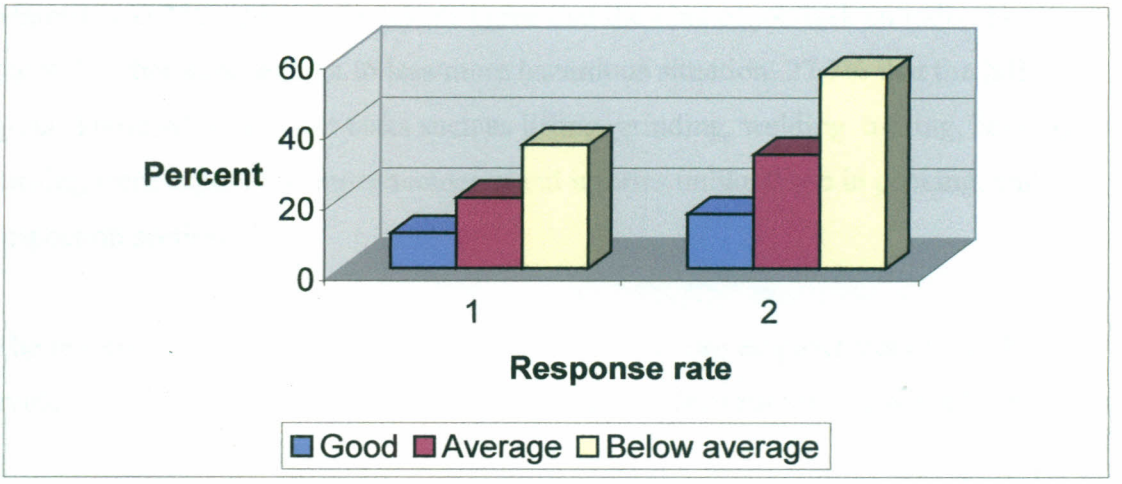
From the study, majority of the employees 55.3% rated their working environment to be in an below average condition, 32.3% rated it as average, 15.4% as good and none as excellent.

Table 4.9 Employees' ratings on their working environment.

Response	Population frequency	Percentage
Excellent	0	0
Good	10	15.4
Average	20	32.3
Below average	35	55.3
Total	65	100

Source: Author (2005)

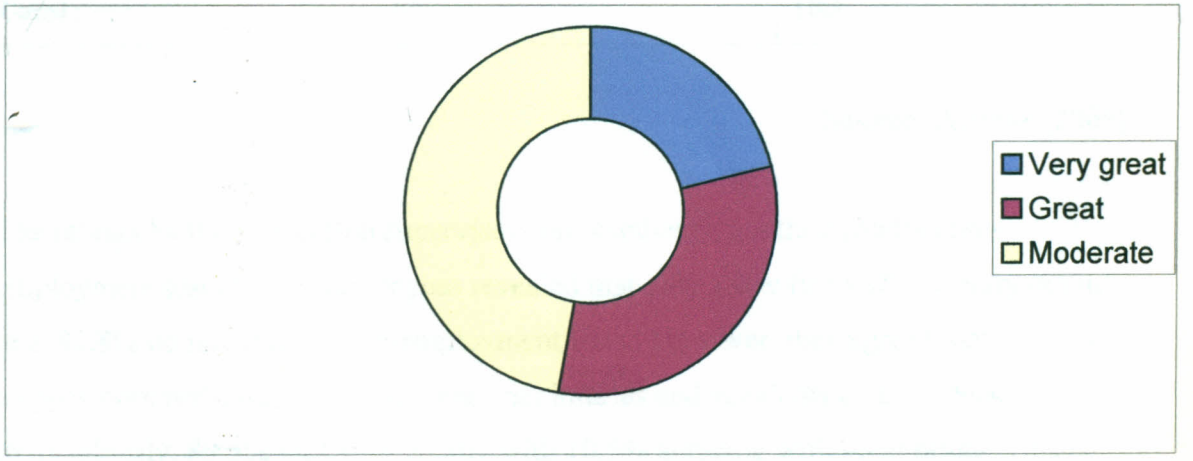
Fig 4.9 Ratings by employees on their working environment.



Source: Author (2005)

The ratings by the production supervisors on the influence of the physical layout were as follows; 47% moderate, 21% great and 32% very great. This is illustrated in fig 4.10

Fig 4.10 Influence of physical layout on occupational safety and health as rated by production supervisors.



Source: Author (2005)

4.2.5 Nature of occupation and its influence on occupational safety and health.

Majority (63.1%) of the respondents agree that the kind of job/task an individual carries out will either expose them to less/more hazardous situation. 27.7% that the influence is great. Those who carry out tasks such as lifting, grinding, welding, turning, bending and drilling were exposed to more accidents and injuries unlike those in packing, and inspection section.

The research revealed that most firm do not carry out pre-employment tests. This is evident in the response rate by employees. 15.5% underwent the test while 84.5% did not.

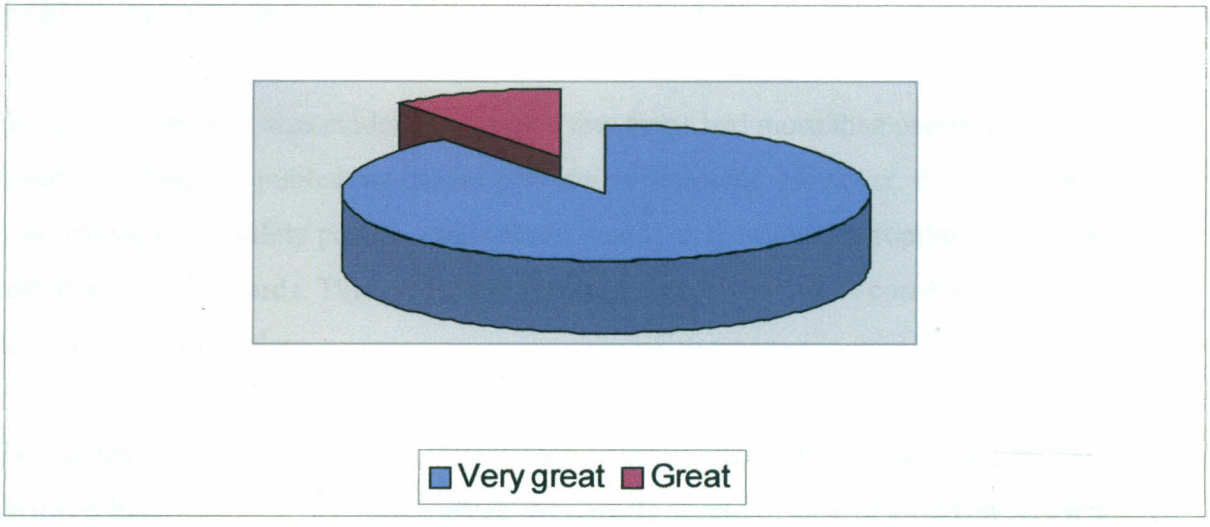
Table 4.10 Employees ratings on how the nature of occupation influences occupational safety and health.

Response	Population Frequency	Percentage
Very great	41	63.1
Great	18	27.7
Moderate	6	9.2
Low	0	0
Total	65	100

Source: Author (2005)

The ratings by the production supervisors on whether or not they conduct pre-employment test on their employees revealed that only a few firms 18.2% carry out the test. 81.8% do not conduct pre-employment tests. However, they agreed that with pre-employment tests, the rate of occupational injuries and accidents could reduce tremendously. 89.5% said very greatly with 10.5% agreeing with great rating. This is presented in Fig 4.11.

Fig 4. 11 Ratings of production supervisors on the influence of nature of occupation on occupational safety and health.



Source: Author (2005)

4.3 QUALITATIVE ANALYSIS.

From this analysis, direct observation and researcher checklist to collect data was used to collect data. From the 10 firms that data was collected, 4 were grouped as large firms, 3 as medium and 3 as small. This categorization is according to Kenya Association of Manufacturers periodic journal, (2003) where firms are categorised according to the number of employees.

Number of employees.	**Category of firm.**
500>	Large
100-500	Medium
0-100	Small

The firms under study had varying conditions of workstation. A few had very well designed work area, the buildings were in good conditions and the equipment and work

tools were in good condition. This is why the employees rated their working environment as average. Provision of protective clothing and apparel was not as required. Most of the employees were not in the right clothing as they carried out their tasks. Some of the clothing were worn-out and needed urgent replacement.

From observation, it was evident that only a few firms had more than one means of communicating and publishing hazard prevention measures. However, the employees rated colour code, safety posters and bulletin boards as the most appropriate media for communicating hazards. This is because they are easy to spot and a constant reminder of danger in the work place.

Exit routes and fire extinguishers were only present in a few firms. The firms that had the facilities had them in a convenient place for e\ready access in case of emergency. First aid kits were not available in most of the firms, where present the kit did not have all the necessities. This was because a replacement was not made once an item was used.

4.4 GAPS TO BE FILLED BY THE STUDY.

The study established that there is significant relationship between occupational safety and health and all the variables considered. The study involved the analysis of data derived from 84 respondents out of the targeted 93 respondents. The study found out that the respondents agreed that the variables influenced occupational safety and health.

To reduce occupational accidents and injuries, their causes must be identified. At the most general level, accidents and injuries are attributed to unsafe employee behaviours or acts, unsafe working conditions, or a combination of these. Safety and health activities in an organization are designed to reduce the occurrences of injury, illness, and death among employees.

Organizations should try and adopt a variety of programmes to reduce accidents, injuries by changing unsafe employee behaviours. These programmes include staffing, training, safety rules and control procedures, and incentives. Along with such programmes, it is also important for the organization to implement programmes to change unsafe conditions. The specific components of programmes to change unsafe conditions vary from situation to situation, but there are four basic elements that are a part of most programmes. These elements are defining unsafe conditions, identifying unsafe conditions, taking corrective action, and establishing adequate controls.

4.5 SUMMARY.

The purpose of the study was to investigate the factors that influence occupational safety and health in manufacturing firms. The variables of communication and publication, nature of occupation, training and education, nature of physical layout and equipment design and provision of protective clothing and apparel were all considered as categorical variables. To guide this study some objectives were formulated.

The causes of an accident can be generally classified as either human or environmental. Human causes are directly attributed to human error brought about by carelessness, intoxication, daydreaming, inability to do the job, or other human deficiency. Environmental causes, in contrast, are attributed to the workplace and include the tools, equipment, physical plant, and the general work environment. The general work environment is basically controlled by the safety and health guidelines practised by an organization or firm.

The study revealed that, the guidelines as stated in the Occupational Safety and Health Act (1970) were not being carried out by the firms. It is just till recently that firms and organizations have identified the need of having Occupational Safety and Health Committees to deal with the welfare of their work force. They attributed this to lack of top management support, weak legal system to persecute defaulters and the loophole in the research of occupational health and safety. Most important of these attributes is the

commitment and involvement of top management. Indeed, this is probably the single most important factor influencing how effective safety programmes are.

Competent occupational safety and health experts require appropriate training. Governments should ensure that the necessary elements of occupational safety and health will be included in the basic training curricula of all who may in future deal with occupational health issues. The availability of such experts in an organization will make it possible for them to identify the unsafe behaviours and unsafe conditions.

CHAPTER FIVE.

CONCLUSIONS AND RECOMMENDATIONS.

5.1 Summary of findings.

The recommendations for both employers and employees that derive from the results are straightforward. The findings encourage employers to implement in their firms the guidelines as stipulated in the Occupational Safety and Health Act (1970) and the employees are encouraged to practice safe behaviour in the workplace. These guidelines elicit behaviour and develop a work force that is safe and well protected from hazards, accidents and illnesses in the work place. This in turn protect the firms from incurring direct costs such as death benefits, medical payments and wage-replacement benefits; indirect cost such as business interruptions, product liability and loss of corporate image.

5.2 Answers to research questions.

On whether communication and publication of hazard prevention measures influence occupational safety and health, most of the respondents said yes. Yet most of the firms under study did not have appropriate programmes to communicate to the employees. Many accidents occur because workers are either unaware or temporarily forgetful of the dangers involved in various areas around the workplace. Standards set by the Hazard Communication Standard in 1983 requires the employee to communicate any hazard to their employees.

Personal protective apparel and equipment was also considered as a major influence on occupational safety and health. This is evident by the affirmative response from the respondents. The general use of such equipment and apparel by workers is to reduce injuries in the workplace. Production supervisors should instil in their workers the importance of using safety attire and protective devices.

Training and educating personnel on issues of occupational safety and health was also a variable that was seen as influencing safety in the workplace. Safety training is an essential part of accident prevention scheme. Training should be a continuous process for its impact to be felt. It is also important to note that the production supervisors should undergo a form of training.

Proper design of workplace and equipment used in it not only reduces the incidence of illnesses and injuries; it also gives a sense of confidence and security. The respondents involved in the study agreed with this variable as being a great influence to their safety and health in the workplace. The study also revealed that the workstation should be designed in so that it will make it difficult for a worker to be exposed to danger.

Though certain occupations present a greater degree of danger in terms of illness or injury, almost every job has a particular number of hazards with which it is associated. From the study, the production supervisors agreed that the nature of task an employee is doing can either expose him to more or less danger. This is evident in that, the production department tends to be recording more incidences of accidents and injuries that the other departments (sales and marketing, finance). This therefore supports the fact that the nature of occupation influences occupational safety and health.

5.3 Conclusion.

It can be concluded that communication and publication is important in for the aim of reducing occupational injuries and accidents. However, the findings show that communicating hazards and hazard situations is not carried out adequately in the firms under study. The employee should be able to tell the danger zones and situations in the workplace by merely looking at a media used to channel such a situation

Training and education is important for an organisation in order to reduce the incidence of occupational safety and health. However, the study revealed that most of the firms did not have a well-organised system for training and educating employees in the issue. A

typical program for supervisors includes such topics as safety rules and regulations, enforcement, safety control procedures, recognition of hazards and disciplinary problems.

It is almost impossible to avoid injuries and accidents in the workplace. For this case the law states that employees be provided with protective attire and equipment to help reduce the incidences accidents. From the study, it is evident that such a measure is important if a firm want to have a work force that is protected from occupational hazards. In spite the importance of such a measure to curb accidents, the provision of the protective attire and equipment in the firms under study remained very low. It was either employees were not offered the attire or the replacement of worn out had no urgency.

Within every plant, large and small, certain physical attributes determine a safe work environment. From the research, it can be concluded that the physical layout of the plant influences safety in the work place. But the finding states that a number of firms under study did not have properly designed layouts. There is a tendency to neglect this area or entrust the job of designing to inexperienced persons. A properly designed workstation will ensure reduced material handling; continuity of operation and every individual will be able to be stationed at the right place at the right time.

It can also be conclude that the nature of occupation influences safety in the work place. But the study revealed that most of the employees had not undergone pre-employment test. Such a test will help the employer match the incumbent to the right job. By doing this the accident rates decrease because the person is capable of handling the task at hand.

5.2 Recommendations.

From conclusions drawn from the research, it is recommended that communication and publication of hazard prevention measures be well illustrated to aid in ease of identification of hazards. The right medias should be used in order to pass the right message. Labelling of chemicals, all danger spots should be painted distinguishing colour as a warning sign. It also requires the utilization of safety literature, safety posters,

bulletin-board displays, and presenting both current and new employees with safety rulebooks.

It is also recommended that both the employees and production supervisors to liase together to ensure that protective attire and equipment is always available. Top-management involvement in safety efforts is quite relevant, for it is top management that can underscore the importance of safety to supervisors and hold them responsible for the safety of their subordinates.

Training and education of personnel on safety issues should be the most important strategy aimed at reducing accidents in the work place. If employee training is to be at all effective in reducing accidents, it must be consistent with the guidelines for designing and conducting a training program. Moreover, the learning that occurs must be constantly reinforced on the job, particularly by the supervisors. Refresher training may prove necessary where standards within a particular work group appear unsatisfactory. Not surprisingly, the more successful of such schemes appear to be lecture-discussion method and require some degree of active employee participation.

Recommendation on the plant layout and equipment design is that top management should involve safety engineers to help in setting up the workstation. This will ensure proper physical features that in turn create a safe work environment. This is because these experts will be able to give the correct set up that will allow easy flow of materials and wastes, less material handling. Conducive work conditions such as ventilation, lighting heating and ventilation are all put in consideration.

It is also recommended that the type of job an individual does should be in line with their experience. This is important because such an individual is able to carry out tasks that he is familiar with. In turn this reduces the chances of getting injured in the process of working. This is where pre-employment test are important as it helps the employer identify the right person for the right job.

5.5 Suggestions for further study.

Further research is recommended in order to provide more insight on the issues involved. For example future researchers may expand on the conceptual framework presented in fig 2.1 or conduct research that deals with one or more variables. The framework could be expanded to help firms apply more safety practices that may enable the overcome incidences of occupational accidents and injuries in a more effective and efficient manner.

It would also be possible to adjust the questionnaire appropriately as to gain knowledge on the intervention programmes used in other sectors such as agriculture, jua kali industry and the health services. This will help in identifying if any pattern may emerge of a chronological nature.

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APPENDIX I

LIST OF INDUSTRIES WITHIN THIKA MUNICIPALITY.

1. Balozi Industries.
2. ***BIDCO.***
3. Kenya Nut.
4. Kenya Fruit.
5. ***B A T.***
6. KEL Chemicals.
7. Kifaru
8. ***Polysack***
9. Bakex Millers.
10. Kenblest.
11. ***Broadways Bakeries.***
12. MAYFEEDS.
13. Kenya Tanning.
14. ***K V M.***
15. Thika Cloth Mills.
16. BHUPCO.
17. ***United Textiles Industries.***
18. Wama Feeds.
19. Munene Industries.
20. ***Ready Timber.***
21. Njuca Consolidated.
22. Bulley Tanneries.
23. ***CARNAUD Metal Box.***
24. MUUS.
25. Kenya Paper Mills.
26. ***CIRIO Del Monte.***
27. Thika Flours Mills.
28. Thika Coffee Mills.
29. ***Mac Nee Millers.***
30. Capwell Industries.

Bolding and italics indicate 10 selected firms.

APPENDIX II.

SPECIMEN LETTER TO THE RESPONDENTS.

KENYATTA UNIVERSITY.
SCHOOL OF BUSINESS,
DEPARTMENT OF BUSINESS ADMINISTRATION.
P.O BOX 43844,
NAIROBI.

To the respondent,

RE: REQUEST TO CONDUCT A STUDY.

I am a postgraduate student researching on the topic **" An investigation into factors influencing occupational safety and health intervention programmes in selected manufacturing firms in Thika municipality".**

You have been selected as one of the respondents in this study. The information supplied will be used strictly for academic purposes only and will be treated with utmost confidentiality.

Your co-operation will be highly appreciated.
Thank you.

ADHIAMBO MAJDA.

KENYATTA UNIVERSITY
SCHOOL OF BUSINESS

TEL: 810901-19 EXT 57215
FAX: 811455/811575

P.O. BOX 43844,
NAIROBI,
KENYA.

Website: ku.ac.ke, E-mail: kuvc@nbnet.co.ke

8/7/2005

TO WHOM IT MAY CONCERN:

Dear Sir/Madam,

RE: RESEARCH PROJECT: DATA COLLECTION

ADHIAMBO MAJDA : D53/7822/2002

This is to confirm that the above named is an M.BA student in the School of Business, Kenyatta University, and she is embarking on her project this semester before she completes her degree programme.

Any assistance you may accord her will be highly appreciated.

DR. M. KHAYOTA
CO-ORDINATOR POSTGRADUATE PROGRAMMES

AN INVESTIGATION INTO FACTORS INFLUENCING OCCUPATIONAL SAFETY AND HEALTH INVERVENTION PROGRAMMES IN SELECTED MANUFACTURING FIRMS IN THIKA MUNICIPALITY.

QUESTIONNAIRE FOR PRODUCTION SUPERVISOR.

Information collected from this questionnaire will be handled with high confidentiality and will strictly be used for academic purposes by the researcher.

SECTION I: GENERAL INFORMATION.

1. What is the name of your firm?.....
2. How long has the firm been in operation?
   - ☐ Less than 2 years.
   - ☐ 2-5 years.
   - ☐ More than 5 years.
3. Under which category would you categories your firm?
   - ☐ Large firm.
   - ☐ Medium firm.
   - ☐ Small firm.
4. How many employees do you have in your department?.....

SECTION II: GENERAL INFORMATION ON OCCUPATIONAL SAFETY & HEALTH.

5. Does your firm define guideline on the Occupational Safety and Health programmes? ☐ Yes ☐ No
6. If yes to 5 above, which areas do these guidelines cover? (√) Tick where appropriate.
   a) Education and training of personnel. ( )
   b) Provision of protective apparel and equipment. ( )

c) Communication and publication programme. ( )

d) Properly designed physical layout. ( )

Others (specify).....

7. Rank the above guidelines on the basis of importance to your firm, starting with **1** as most important to **4** as the least important.

	1	**2**	**3**	**4**
a) Education and training of personnel.	( )	( )	( )	( )
b) Provision of protective apparel.	( )	( )	( )	( )
c) Properly designed workstation layout.	( )	( )	( )	( )
d) Detailed accident reports and records.	( )	( )	( )	( )
e) Regular workstation inspection.	( )	( )	( )	( )

8. Why do you have such programmes?

a) Because its government policy. □

b) Part of human resource welfare requirement. □

c) Because it is part of our corporate social responsibility. □

d) Other reason (s).....

.....

9. What is the overall achievement of such programmes in your firm?

a) Reduction in work related injuries, accidents and illnesses. □

b) Increased productivity. □

c) Decreased costs on medical and other expenses related to injuries, accidents and illnesses in the workplace. □

d) Others (specify).....

SECTION III: Communication and Publication programme.

10. Do you think communication and publication affects safety and health programme in the firm? □Yes□No

11. Do you have any programme in place for communicating and publishing hazards in the workplace? □ Yes □ No

12. If yes to 11 above, which methods do you use? Tick (√) where appropriate.

a) Colour code for identifying firm hazards. ( )

b) Safety posters. ( )

c) Bulletin board. ( )

d) Weekly journals. ( )

e) Video display. ( )

f) Safety rulebooks. ( )

g) Safety columns/ Newspaper clippings. ( )

h) Statistical charts, graphs and tables. ( )

i) Others (specify).....

13. If no, to 11, do you think that this affects occupational health and safety, i.e. there is a decrease or increase in accidents, illnesses and injuries in the firm?

☐Yes ☐No

14. If yes, to 13 above, to what extent? Tick (√) where appropriate.

A. Very great. (5)

B. Great. (4)

C. Moderate. (3)

D. Low. (2)

E. Very low. (1)

SECTION IV: Personal protective equipment and apparel.

15. Do you think that the provision of protective equipment and apparel influence occupational safety and health?

16. If yes to 15 above, to what extent?

A. Very great. (5)

B. Great. (4)

C. Moderate. (3)

D. Low. (2)

E. Very low. (1)

17. Does your firm provide protective equipment and apparel to the employees?

☐ Yes ☐ No

18. If yes to 15 above, do you inspect to make sure they wear them when working?

☐ Yes ☐ No

19. If no to 15 above, why do you not offer protective equipment and apparel to your employees? Briefly explain.....

.....

20. Where special equipment is needed for any hazardous work, is it available?

☐ Yes ☐ No

21. Do you make sure that worn out equipment and apparel is replaced?

☐ Yes ☐ No

22. Is there sufficient first-aid equipment available for use?

☐ Yes ☐ No

23. Has there been a reduction in the number of accidents in the firm?

☐ Yes ☐ No

SECTION V: Training and Education of personnel.

24. Does your firm offer a training course on safety and health issues in the workplace?

☐ Yes ☐ No

25. Do you think training and educating staff the occupational health and safety influence occupational health and safety? ☐ Yes ☐ No

26. If yes to 25 above, to what extent?

A. Very great. (5)

B. Great. (4)

C. Moderate. (3)

D. Low. (2)

E. Very low. (1)

27. If yes to 24 above, is this training offered to;

a) All employees.

b) A selected group. (Specify).....

28. If yes to 27 above, when do you train them?

a) Once hired.

b) Often to keep skills up to date.

c) Others (Specify).....

29. Do you think that training and educating employees' occupational safety has reduced incidences of accidents, illnesses and injuries in the work place? If yes, to what extent?

A. Very great. (5)

B. Great. (4)

C. Moderate. (3)

D. Low. (2)

E. Very low. (1)

30. Which methods do you use in training and educating the personnel on a safe and healthy workplace? Tick (√) where appropriate.

a) A presentation by a guest speaker. ( )

b) Group activities e.g. games and competition. ( )

c) Conferences and workshops. ( )

d) Lecture-discussion. ( )

e) Field trips. ( )

f) Reading assignments. ( )

g) Others (specify).....

31. Are employees showing an attitude of responsibility for their own safety and that of others?

☐ Yes ☐ No

SECTION VI: Nature of the occupation.

32. What activities do staffs in your department do? Briefly outline.

.....

.....

.....

.....

33. Do you think some activities or occupation are more hazardous than others?

☐Yes ☐No

34. From your list in 32 above, please out line which activities you consider the most hazardous.

.....

.....

.....

35. Does nature of occupation of an employee influence health and safety in the firm?

☐Yes ☐No

36. If yes to 35 above to what extent?

A. Very great. (5)

B. Great. (4)

C. Moderate. (3)

D. Low. (2)

E. Very low. (1)

37. Do you use pre-employment physical test before placing an employee in a suitable job?

☐ Yes ☐ No

SECTION VII: Physical plant and equipment design.

38. Do you think that the workstation layout and equipment design influence safety in the work place? If yes, to what extent?

A. Very great. (5)

B. Great. (4)

C. Moderate. (3)

D. Low. (2)

E. Very low. (1)

39. Is fire equipment and other safety materials placed in appropriate places and are they checked frequently?

☐Yes ☐No

40. Are buildings and machinery in good condition? ☐ Yes ☐ No

41. Has the firm been inspected by a safety engineer? ☐ Yes ☐ No

42. If yes, to 24 above, how when does the inspection take place?
    a) Once a month
    b) Once a year
    c) Others (specify).....

43. Is there any issue that you feel has been left out in this study or any recommendations you would like to make? (Please indicate)

Thank you for your co-operation.

AN INVESTIGATION INTO FACTORS THAT INFLUENCE OCCUPATIONAL SAFETY AND HEALTH INTERVENTION PROGRAMMES IN SELECTED MANUFACTURING FIRMS IN THIKA MUNICIPALITY.

EMPLOYEE QUESTIONNAIRE.

Information collected from this questionnaire will be handled with high confidentiality and will strictly be used for academic purposes by the researcher.

1. How long have you worked in this firm?
   a) Less than 2 years. ☐
   b) 2-5 years. ☐
   c) Over 10 years. ☐
2. Please, indicate the position in the firm.....
3. Do you know what occupational safety and health is? ☐ Yes ☐ No
4. If yes, are the guidelines stipulated by the Act being implemented in your work place? ☐ Yes ☐ No
5. Have you ever been involved in an accident in the firm? ☐ Yes ☐ No
6. If yes to 3 above, briefly explain what caused the accident.....
.....
7. Does your supervisor communicate and publish hazard prevention measures?
   ☐ Yes ☐ No
8. If yes to 6 above, which methods are used? Tick (√) where appropriate.
   a) Colour code for identifying firm hazards. ( )
   b) Safety posters. ( )
   c) Bulletin board. ( )
   d) Weekly journal. ( )
   e) Safety rulebooks. ( )
   f) Safety columns/ Newspaper clippings. ( )
   g) Statistical charts, graphs and tables. ( )

9. With all the communication and publication, do you think that the work place has become safer? ☐Yes ☐ No

10. If yes to 9 above, to what extent?

a) Very great (5)
b) Great (4)
c) Moderate (3)
d) Low (2)
e) Very low. (1)

11. Are protective apparels and equipment provided for protection injuries accidents?

☐ Yes ☐ No

12. When do you wear the protective clothing and equipment?

.....

13. Have this influenced your safety in the work place? ☐ Yes ☐ No

14. If yes to 13 above, to what extent?

a) Very great (5)
b) Great (4)
c) Moderate (3)
d) Low (2)
e) Very low. (1)

15. Have you ever been trained on health and safety issues in the workplace?

☐ Yes ☐ No

16. If yes to 10 above, when?

a) When hired. ☐
b) Once a month. ☐
c) Once a year. ☐
d) Never. ☐
e) Others (specify).....

17. Which methods do you find most effective when it comes to training and educating on a safe and healthy workplace? Tick (√) where appropriate.

a) A presentation by a guest speaker. ( )

b) Group activities, e.g. games, competition. ( )

c) Lecture –discussion. ( )

d) Visual presentation. ( )

e) Field trips. ( )

f) Reading assignments. ( )

g) Others (specify).....

18. Do you think the training impacted positively in your safety at work?

☐ Yes ☐ No

19. If yes to 18 above, to what extent?

a. Very great (5)

b. Great (4)

c. Moderate (3)

d. Low (2)

e. Very low. (1)

20. How do you rate the condition your work area? Tick (√) one.

a) Excellent. ( )

b) Good. ( )

c) Average. ( )

d) Below average. ( )

21. Do you think the nature of the job/occupation influence safety and health in the workstation? ☐Yes ☐No

22. If yes to 21 above, to what extent? Tick (√) one.

a) Very great (4)

b) Great (3)

c) Moderate (2)

d) Low (l)

23. Did your employer use a pre-employment physical test before your placement?

☐ Yes ☐ No

24. Are you familiar with the safety rules that govern the operations of machinery?

☐ Yes ☐No

25. If yes to 16 above, which off these are familiar? Tick (√) where appropriate.

a) Machinery should be lubricated regularly. ( )

b) All guards should be in place before the machine is started. ( )

c) Turn off the power before adjusting or unclogging machinery. ( )

d) Machinery should be used with due care and only for the intended purposes. ( )

e) Avoid wearing loose fitting, torn clothing around moving machinery.( )

26. Has there been any reduction in the number of work related accidents, illnesses, and injuries? ☐ Yes ☐ No

27. Is there any issue that you feel has been left out in this study or any recommendation you would like to make? (Please indicate).

Thank you for your co-operation.

RESEACHER'S CHECKLIST.

Tick (√) where appropriate.

	YES	NO
1. Are the buildings in good condition?		
2. Are machinery and hand tools in good condition?		
3. Are floors solid and in good condition?		
4. Are tools and machinery being used for their intended purpose?		
5. Is adequate and safe lighting provided for all buildings?		
6. Are workers wearing protective clothing?		
7. Is there a first-aid kit in sight?		
8. If there are staircases in the building, are they well railed?		
9. Is the fire equipment and other safety materials placed in readily accessible place?		