

***“A comparative study of the level of Occupational safety and Health (OSH) provisions and practice of Kaliti Metal Products Factory and Kotebe Metal Tools Factory”***

***A Thesis Submitted to the School of Graduate Studies of Jimma University in Partial Fulfilment of the Requirements for the Award of the Degree of Master of Business Administration (MBA)***

**By:**

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**JIMMA UNIVERSITY  
COLLEGE OF BUSINESS & ECONOMICS  
MBA PROGRAM**

**JULY, 2020**

**ADDIS ABABA, ETHIOPIA**

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Under the Guidance of

Mr. Emnet Negash

And

Mr. Mohammed Yasin



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## Abstract

*Occupational safety and Health is becoming a mounting concern for worker's safety and for having strong and healthy workforce. The ILO figure shows that occupational death and injuries are increasing, apart from having the legislation and policies on the ground, The provisions and practice of OSH at each undertaking needs assessment and reinforcement. The purpose of this research is to assess the level of occupational safety and health provisions and practice in Kotebe Metal Tools and Kaliti Metal Products factories. The data is collected using questionnaire, interview of key informants and observation method. The sample size included in this study were 109 employees from Kotebe Metal Tools Factory and 185 employees from Kaliti Metal Products Factory. They were identified using simple random sampling and purposive sampling method. The data were collected from employees and from key informants. A walk-through observation has given first-hand information on how the work process is done and the safety measures are practiced. The quantitative data is analysed using descriptive analysis by SPSS and the qualitative data is analysed using thematic content analysis method. The areas of assessment with regards to OSH provision were availability of OSH Program known by employees, training, pre-employment orientation, safety meetings, presence of safety representative, provision of PPE, periodic health check, first aid, accident registration and reporting. OSH practice was assessed in relation to PPE use, regular risk assessment and regular inspection. The result of this study showed gaps in the level of OSH provision and practice at both factories based on the minimum standards of OSH. According to the result, the gap is more extensive in Kotebe Metal Tools Factory than in Kaliti Metal Products Factory. This shows that there are discrepancies in the implementation of OSH program at different manufacturing industries and the performance is not 100% at both factories. The gaps identified contributes for the occurrence of accidents and injuries at the workplace. Therefore, in order to meet the minimum standards, Kaliti Metal tools factory is recommended to maintain the best practices and improve on the activities where gaps are observed. But Kotebe Metal Tools factory needs to improve all its practices to create a conducive work environment.*

**Key Words:** *Occupational Safety and Health, Metal manufacturing, Provisions and Practice, working environment, occupational accident and injuries.*

## CERTIFICATE

*This is to certify that the thesis entitled, “A comparative study of the level of Occupational safety and Health (OSH) provisions and practice of Kaliti Metal Products Factory and Kotebe Metal Tools Factory”, Submitted to Jimma University for the award of the Degree of Master of Business Administration (MBA) and is a record of Valuable research work carried out by Ms. Menbere Teklu, under our guidance and supervision*

*Therefore, we hereby declare that no part of this thesis has been submitted to any other university or institutions for the award of any degree or diploma.*

<i>Main Adviser’s Name</i>	<i>Date</i>	<i>Signature</i>
_____	_____	_____
<i>Co-Advisor’s Name</i>	<i>Date</i>	<i>Signature</i>
_____	_____	_____

## DECLARATION

I hereby declare that this thesis entitled “*A comparative study of the level of Occupational safety and Health (OSH) provisions and practice of Kaliti Metal Products Factory and Kotebe Metal Tools Factory*”, has been Carried out by me under the guidance and supervision of Mr. Emnet Negash and Mr. Mohammed Yasin.

The thesis is original and has not been submitted for the award of degree of diploma any university or instructions.

Researcher's Name

Date

Signature

\_\_\_\_\_ Menbere Teklu \_\_\_\_\_

\_\_\_\_\_ July 2, 2020 \_\_\_\_\_

\_\_\_\_\_

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# CHAPTER ONE

## 1. INTRODUCTION

This chapter discusses the background information about this study. It also includes information about the background of the study; the study organizations, statement of the problem, the objectives, the basic research questions, the significance of the study and the scope of the study.

### 1.1 Background of the Study

At global level, the world economy has faced a very big challenge to survive and excel above the economic crisis emerged during the past years. This has affected negatively job security and also worker's health and safety at the workplace. (UNCTAD Secretariat Task Force, 2009)

In order to reverse the economic curve upward, countries took different measures and strategies that can be of help to boost their economy. Among the measures taken industrialization accounts for the higher percentage of increase. There is no doubt that industrialization improves the livelihood of the society by decreasing unemployment rate and poverty and increasing income and living conditions. Its significance is highly appreciated especially in developing countries where per capita income is very low. (WORKU, 2007)

The focus made on economic survival and increase in manufacturing industries should in parallel consider worker's health and safety with a duty to protect employees from adverse health effects and workplace accidents. But practically on the ground, occupational health and safety seems highly neglected by different stakeholders, regulatory authorities, managers and also the workers themselves for different reasons. (Kitaw, 2016) Due to this, workplace accidents and illnesses are costing considerable amount of human life and affecting their quality of daily living. The magnitude and severity of the problem can be minimized at a significant rate by application of standard OSH provisions and practice. In order to make this happen, managerial commitment and follow-up is very important at all levels. ((TNO), (Matrix), (TNO), & Evelina, 2014).

In considering the Ethiopian case, the health and safety issues in Iron, Steel and Metal Manufacturing Industries (ISMMI), in Addis Ababa, were given low attention but have a large

proportion of employment as compared to other sectors. It seems that with no due attention about the safety issues, Ethiopia's Growth and Transformation Plans (GTP), both GTP I & GTPII (Asratie, [2014](#); MoFED, [2010b](#)) have identified metal and engineering sector as one of the strategic development sectors to be pursued by the nation. Though it is true that, when the manufacturing sector is well matured and efficient, it will provide growing employment opportunities(Liu et al., [2015](#)) but should not ignore safety and health issues. Having these situations, the employment capacity for the manufacturing sector in Ethiopia has grown drastically (93,500 workers in 2000, 132,172 in 2008 and 200,014 in 2012(CSA, [2016](#); MoFED, [2010b](#)). (Berhan, Reviewing editor (2020))

According to WHO, Health is defined as the complete physical, mental and social well-being of an individual but not merely the absence of disease. The ILO/WHO defines, the promotion and maintenance of the highest degree of physical, mental, social well-being of workers in all occupations. (Joint ILO/WHO Committee on Occupational Health)

(XX World Congress on Safety and Health at Work 2014: Global Forum for Prevention, 25 August,2014)Occupational Safety and Health Management (OSHM) plays a significant role in making businesses profitable, competitive and also to have motivated employees. It is also a means to achieve an effective and efficient framework that can minimize workplace accidents, injuries and illnesses that could incur the company with huge direct and indirect costs. But the economic returns of OSH investments are not usually considered, analyzed and appreciated in the business world. (Reference). (O.Alli, 2008)

A commonly used argument is also that poor countries and companies cannot afford safety and health measures. There is no evidence that any country or company in the long run would have benefited from a low level of safety and health. On the contrary, recent studies by the ILO based on information from the World Economic Forum (2002) and the Lausanne Institute of Management IMD demonstrate that the most competitive countries are also the safest. Selecting a low-safety, low-health and low-income survival strategy is not likely to lead to high competitiveness or sustainability (Amponsah-Tawiah, (2011).)

Due to lack of knowing real impact of poor OSH management, public ignorance, law resources for OSH improvement, lack of policy reinforcements, poor statistics of workplace accidents and illnesses, lack of regular follow-up with regulatory bodies, lack of treatment and compensation etc. contributed for making OSH a low priority in manufacturing industries. (ILO- Council of Ministers, 2019).

Organizations are duty bound to ensure that safety is availed to all workers regardless of their positions. It is argued that there has been low compliance to health and safety regulations; where the level of regulation and enforcement of occupational health and safety is grossly inadequate especially when compared to developed countries (Rotich & Kwasira, 2015).

Hazard identification and risk assessment mechanisms should be part of OSH services in order to avoid the occurrence and recurrence of injuries at the workplace. The risk mitigation strategies need adequate capacity in terms of knowledge and resources within the manufacturing industries and at the national level. (Abera Kumie1, Dev. 2016).

Hence, creating a safe and healthy work environment has paramount importance to prevent human death and disability, needless cost, and will also benefit the business in cost saving, increased productivity and long term sustainability. (Aithal, 2017)

The main pillar of any manufacturing industry is the workforce. No industry functions without human capital. Every organizations and businesses including Kaliti Metal Products factory and Kotebe Metal Tools Factory need a healthy workforce in order to achieve their goal and make their business successful at industry and national level.

## **1.2 Statement of the Problem**

The health and safety of the world's workforce periodically attracts the attention of the national and international media. Industrial disasters, especially those resulting in multiple fatalities, make global headlines. But the reality is that throughout the world, many thousands of people die from their work activities every day, and numerous fatalities are unreported or ignored. (XX World Congress on Safety and Health at Work 2014: Global Forum for Prevention, 25 August,2014).

According to ILO estimates, worldwide, 2.78 million workers die each year as a result of occupational injuries and illnesses. Of those, approximately 2.4 million are linked to work-related disease. The total cost of illnesses, injuries and deaths was 3.94 percent of the global GDP, or \$2.99 trillion. Nevertheless, the latest figures and estimates indicate a huge problem. Globally 1,000 people are estimated to die every day from occupational accidents and a further 6,500 from work related diseases. The aggregate figures indicate an overall increase in the number of deaths attributed to work: from 2.33 million deaths in 2014 to 2.78 million deaths in 2017 (Hämäläinen et al, First published 2019)

Workers in different manufacturing industries in Ethiopia are exposed to fatal and non-fatal accidents. The non-fatal accidents range from simple injury to lifelong disabilities. The number lacks clarity due to the reporting mechanism for work related accidents, the clarity of the process and knowledge contributes for its practice. This backs obtaining fewer attentions by all stakeholders and the economical and human benefits of OSH are undermined. (Mywage.org/Ethiopia, 2019)

Historically, steel industries were also known for their unsafe working environment (Pedrag Milic, [2011](#)), as a result, the work-related injuries are more and more likely to arise in industry workers (Motbainor, Achenef & Kumie, [2007](#); Takele & Abera, [2007](#)). Similar studies conducted in different regions of the country have justified that Ethiopian manufacturing industries are under a high rate of workplace accidents (Aderaw, Engdaw, & Tadesse, [2011](#); Kifle et al., [2014](#); Serkalem, Moges, & Ahmed, [2014a](#), [2014b](#)). However, having a safer and risk-free work environment is the most important strategy to ensure workers' health and to contribute positively to the national economies through improved productivity, product quality, work motivation, job satisfaction and overall quality of the worker's life and society (Ferri et al., [2016](#); ILO, [2014](#); MoFED, [2010a](#); Podgórski, [2006](#)). (Berhan, Reviewing editor (2020)).

A majority of workplace accidents are preventable and the severity of the injury can be minimized, by proper intervention of OSH standards and practice at the workplace. The extent of OSHM in place and its practice at the workplace plays a significant role in accident reduction According to J. Watcher and P. Yorio, the relationship of Safety Management practices and positive safety results i.e. accident reduction were tested and proved to be positive. But at different workplaces, today, accidents and injury rates are high. Manufacturing industries are one of the workplaces with high exposure to hazards and injuries. Workers safety and health is not the highest priority. In different workplaces, workers are seen working without proper protection at the exposure area. The long-term health effects are not considered.

On the positive side, Ethiopia has OSH policy and has labour proclamation which states the minimum provisions and practice supported by law. But the implementation of OSH goes beyond putting policies and legislations in place. Its practice needs risk anticipation and mitigation strategies. Hazard identification and risk assessment mechanisms are part of OSH services in order to avoid the occurrence and recurrence of injuries at the workplace. The risk mitigation strategies need adequate capacity in terms of knowledge and resources within the manufacturing industries and at the national level. (Abera Kumie1, Dev. 2016)

Despite having OSH policies and labour law with the positive proof of the relationship of Safety Management practices in accident reduction, the occurrence and rate of accident is high. Therefore, this study aims to investigate the reason behind work-related accident rates not declining and whether or not the provisions given under OSH legislations are practiced. It also identifies the gaps between the standard and the actual OSH provision and practice, which can contribute to the occurrence of accidents and injuries at the workplace.

### **1.3 Basic Research Questions**

1. What is the functional occupational safety and health provision in Kotebe metal tools factory and Kaliti metal products factory?
2. How is the safety measures practiced by the employees at the study area?
3. What are the gaps between the standard and the actual provision and practice of OSH?

### **1.4 Objectives of the Study**

#### **1.4.1 General Objective**

To assess the availability and management of Occupational Safety and Health program by different stakeholders with in Kotebe and Kaliti metal manufacturing industries.

#### **1.4.2 Specific objectives**

- To identify and review occupational safety and health provisions functional in Kotebe metal tools factory and Kaliti metal products factory.
- To assess the level of safety measures practiced by the employees at the study area.
- To identify the gaps between the standard provisions of OSHM and the actual practice in the companies

### **1.5 Significance of the Study**

On one hand, findings from this research will give firsthand information regarding the current OSH practices by the selected industries which will help concerned stakeholder and government authorities to have updated information about the current trend. While on the other hand, the research will identify gaps between the standard OSHM and the actual practice and will help the

companies to take corrective action to reduce or eliminate workplace accidents and injuries encountered during operations. It will also help to improve the working condition of employees as a result of recommendations from this study. It gives idea for government authorities to plan areas that needs reinforcement in order to ensure worker's safety as a result of OSHM. Finally, it will help to identify research gaps to make further studies on the subject matter.

## **1.6 Scope of the study**

This study is conducted only in the two selected manufacturing companies, namely Kaliti metal products factory and Kotebe metal tools factory. The main focus of the study is on the availability and management of Occupational Safety and Health by different stakeholders within the study manufacturing industries. The study focuses on OSH provisions and practice related to minimum provisions only. The aspects looked into were the availability of OSH provisions and safety measures, OSH practice at different level within the selected factories, their recording and reporting system of OSH, and the gaps between the OSHM standards and the actual practices. The OSH practice includes appropriate use of personal protective equipment, providing training to workers on safety and health, reinforcement measures in place to maintain safety, handling of accidents and its control measures. The respondents of this study are composed of both management and non-management staff at different levels such as: heads of OSHM units, managements and employees at different levels in the selected manufacturing industries (i.e. Kotebe metal tools factory and Kaliti Metal Products Factory). The method used for this study is descriptive and does not include investigation of its cause and effect relationship.

## **1.7 Background of the study area**

This study is conducted in the selected metal products manufacturing industries namely Kaliti Metal Products Factory (KMPF) and Kotebe Metal Tools Factory.

Kaliti Metal Products Factory is located about 200 meters from the main road to Debrezeit, and 20 Kms away from the center of Addis Ababa (capital). It occupies a total land area of 99,400 square meters. It was established in 1968. The factory was acquired by Tsehay Industry Share Company from Privatization and Public Enterprises Supervising Agency (PPESA) since July 12, 2012. The factory has 392 workers. Of which 342 are male and 50 are female.

The fact that the factory has been in the business for more than 47 years, it has contributed significantly to the emerging industries and construction sectors through the supply of metal products. Moreover, the factory has made efforts to improve itself and its outreach by carrying out various system improvement works such as Quality Management System (ISO 9001:2008); Integrated Performance Management System; Business Process Re-engineering and also expansion works on the manufacturing units especially on tube making lines; Management Information System and; Implementation of KIZEN Philosophies.

The factory manufactures a range of different kinds of steel products through the cold rolling process. The products are used as input for the construction sector, metal industry, metal workshops & small scale industries.

Kotebe Metal Tools Factory (KMTF) is located about 10 kilometres from the city center along the Road to Dessie., Addis Ababa, Ethiopia. It is the only dedicated manufacturer of hand tools in Ethiopia. It performs forging, casting, die design and manufacturing and related activities in the production of hand tools. Currently, KMTF is a manufacturing Enterprise under Nigat Mechanical Engineering S. C. (Nigat) which is an Ethiopian company established in 2004. It has 189 workers of which, 100 are male and 89 females. The number of employees during data collection was found to be lower than the information identified during preparation of proposal. <https://www.nigatmechanical.com/company-background/>

# CHAPTER TWO

## 2. REVIEW OF RELATED LITERATURE REVIEW

### 2.1 Theoretical Review

#### 2.1.1 Definition of Concepts in Occupational safety and health

According to Alli(2008), Occupational safety and health (OSH) is generally defined as the science of the anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities and the general environment. (O.Alli, 2008) While on the other hand, ILO and the World Health Organization (WHO) provide a definition on Occupational Health, which is commonly understood as: “the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations”. WHO considers an occupational health service to be responsible for the overall health conditions of the workers and, if possible, of his or her family. (ILO, ILO- Council of Ministers , 2016)

A wide variety of professional and technical inputs should be incorporated in order to make this program efficient, successful and beneficial for the wellbeing of workers at different level. Safety and Health is one of the fundamental issues of the workforce. Its applicability and practicality depends on the knowledge, skills, resources available and on the importance given to the matter by concerned stakeholders. Its management is also challenged by different matters like conflicting demands of financial benefit, the speed at which the work has to done, and the requirements to do it safely. Similarly, the complexity of the nature and type of the workplace and the activities performed are too diverse which makes it difficult to address all safety and health issues in a similar manner and to a satisfactory level. The other most important factor for its success is the behavior of individuals and group while performing the job. This means that the final end point of its practicality depends on the knowledge, insight, commitment, active involvement and safety culture of an individual, group and organizations. (Training, n.d.)

According to (RRC Training), Key words in OSH related to its definition are;

Health- is the absence of ill-health both physical and psychological.

Safety- is the absence risk of injury ranging from mild to serious injuries

Welfare- is related to the availability and accessibility of basic facilities in the work environment.

Occupation- A job, employment or the character of being physically inside or upon a place.

Among the very many components of decent work/ILO, OSH is one of the key components for achieving a decent working environment. The implementation of OSH programs at the national and organizational level needs to adopt the standards and instruments of ILO stated in the form of conventions, recommendations, code of practice, principles and provisions because, 80% of ILO standards and instruments are related to Occupational Safety and Health (O.Alli, 2008)

The scope of Occupational Safety and Health has become wide-ranging with the growing technology and in response to the global economic, social, environmental and political changes. (ILO, ILO- Council of Ministers , 2016) The changes in these factors are forcing OSH to broaden its room for coverage. Technological advancement contributed for the prevention of injuries by incorporating safety guarding in manufacturing of machineries and also brought new health hazard concerns in relation to the use of VDT. In a similar manner, all the issues mentioned above has both positive and negative effects. Therefore, the scope of OSH certainly should adapt itself to the changes and demands imposed, to enable it at improving worker's safety and health.

### **2.1.2 An overview of global and national trends in occupational safety and health**

Occupational health and safety (OHS) has become the concern of human wellbeing that, this day, industrialization and service giving sectors development is accelerating resulting in a high concern of workplace health problem. (Kitaw, 2016)

Like all aspects of business, OSH needs to be properly managed. A company's OSH system helps ensure effective control of OHS risks and continual improvement in OHS performance, prevent work-related illness or injury and to achieve compliance with regulations and standards. It needs proactive management than reactive one and OSH management plan needs to be integrated with strategic plan of the company to be fulfilled at different levels. (Moraru, 2012)

According to the latest ILO data, every year 337 million people work place fall victim to work accidents.2 million and 300,000 persons lose their lives as a result of accidents or diseases related to their occupation. These figures suggest that every day 6,300 persons die because of insufficient

measures in ensuring OHS (EFENDİOĞLU, 2011) The fatality rate in Sub-Saharan African countries is 21 per 100,000 workers and the accident rate per 100,000 workers is 16,000 (Takala 1999, cited in (Jilcha, 2017)

Statistics from Ghana, Kenya, South Africa and Zimbabwe show that, a large proportion of all deaths and morbidities result from accident /injuries. In rural District in Kenya, 17% of all deaths among persons of ages 15-64 years in the 1980s were attributed to injuries (Thobora &Tuita, 2015).

In comparison, over the past decades, significant improvements have been made regarding OSH as many more countries have appreciated its importance and the need to give higher priority to preventing accidents and ill-health at work (ILO, Global Trends and Challenges on Occupational Safety and Health, 2011) Conditions of work and the work environment may have either a positive or hazardous impact on health and well-being. Ability to participate in the working life opens the individual possibilities to carry out economically independent life, develop his or her working skills and social contacts. (WHO, 1994). An OSH Management System (OSHMS) can be seen as an important preventative tool to effectively manage hazards and risks at work. (ILO, OSH Management System:, 2011) Thus an unprecedented amount of information about occupational risks and how to manage them is now available, much of it on-line, and OSH appears to be better managed in many enterprises. Consequently, numbers of serious accidents appear to be declining globally although the picture for occupational ill-health is less encouraging.

Nowadays, many governments have thus adopted a more systematic approach in managing and promoting OSH nationally. National OSH policies and legislation have been updated and modernized and national OSH systems have been better managed and reinvigorated so as to have greater impact. (ILO, Global Trends and Challenges on Occupational Safety and Health, 2011)

As occupational safety and health is a complex area that depends on the participation of many disciplines and stakeholders, using a management systems approach can help bring about coherence, coordination, simplification and speed in the inclusion of regulatory requirements into any OSH measures on a national level. (ILO, Global Trends and Challenges on Occupational Safety and Health, 2011)

### **2.1.3 Key Principles in Occupational Safety and Health**

The most successful economies have demonstrated that workplaces designed according to good principles of occupational health, safety and ergonomics are also the most sustainable and

productive. In addition, a healthy economy, high quality of products or services and long-term productivity are difficult to achieve in poor working conditions where workers are exposed to health and safety hazards. (WHO-EM/OCH/85/E/L, 2001). At the time when formation of a company, the goals of safety, safety programs, policies, plans and procedures should be documented. (Hussein, Dec,2016)

A number of key principles underpin the field of occupational safety and health. These principles and the provisions of international labor standards are all designed to achieve a vital objective that work should take place in a safe and healthy environment. (Fudan SIRPA Think Tank Report Series, 2017) When discussing about key principles structure on occupational safety and health programmes and policies, there is no comprehensive principles as different countries have corresponding principles of their own. Moreover, ethical considerations regarding such matters as individuals' rights to privacy must be taken into consideration when developing policies (O.Alli, 2008).

#### **2.1.4 Global and National Economic growth and industrialization**

The Economy of a country largely depends on many sources like agriculture, service, manufacturing, tourism etc. Ethiopia's economy largely depends on agriculture. Due to this, the rate of unemployment is high as not so many job opportunities are created in the agriculture sector. In addition, the percentage of goods imported for domestic use is very high. This requires the input of huge amount of foreign currency which is not often affordable. This creates imbalance between supply and demand resulting in price inflation and worsening the circles of poverty (JOHN W. MELLOR, 2010).

In order to reverse this crisis and gain economic success, industrialization and or industrialized agriculture is considered as a solution and the back bone for the economy. Among the sectors of industry, manufacturing is the vital in terms of attaining economic achievements (Increase in GDP, import will be less than export, job opportunity increases etc ).

For a country like Ethiopia, who is in the era of economic transformation, the structure and establishments of manufacturing industries will be in the form of mainly FDI (Foreign Direct Investment). The main point of attraction for FDI is low cost of manpower, high number of working population, low level of literacy etc. Small and medium manufacturing industries takes huge

percentage of the industries economy which gives rise to unrecognized employment conditions. (Fudan SIRPA Think Tank Report Series, 2017) The focus on the economic growth and safe working condition will not be balanced in the emerging economy. This deprives the realization of OSH for improving the work environment and the consideration of OSH as a strategy for achieving business goals.

### **2.1.5 Manufacturing Industries and OSH**

Manufacturing industry sectors are diverse in nature. Some of the main manufacturing industries in Ethiopia are textile, leather, cement, food and beverage, steel manufacturing, etc. This sector is also given the top priority from the government side due to its high availing capacity for job opportunity and it is the best means for alleviating poverty. Though it has paramount importance, the risk of exposure to hazards resulting in recognized and unrecognized occupational diseases and a number of fatal and non-fatal injuries are high. Government and other stake holders should give equal attention to OSH while entertaining the expansion of manufacturing industries. One of the cornerstones for sustainable development in the manufacturing sector is a healthy workforce. Therefore, investment on the health and safety of employees is a business by itself with a worthy payback. Most of the time the perception of the key players in OSH management is implementation of a safety program is costly but the losses associated with injuries, medical cost, compensation cost, and lost work days are not considered in relation to business profit and increased productivity. In practical terms, the cost of prevention is much less than the direct and indirect costs associated with injuries and ill-health conditions (UNIDO, 2017).

### **2.1.6 Common Hazards in manufacturing sector**

Hazards are present in all workplaces with different levels of risks attached to it. One of the areas with high risk level is the area of manufacturing industries. The most important step to design risk mitigation strategies is to identify the risks prevalent in the area. Some of the common hazards are noise, chemical, heat exposure, airborne hazards, vibration, Electric hazard, fire hazards, slips and fall etc. (Lim Hui and Hussein)

During worker's time he / she is exposed to various hazards including accidents, noise, dust, vibrations, heat and harsh chemicals among others ( Nzuve *et al.*, 2012).

The healthy workplace concept provides a valuable tool for developing or reinforcing occupational health and health standards so that conditions continuously improve for the working population. However, a healthy workplace is not only free of hazards, but also provides an environment that is stimulating and satisfying for those who work there. The healthy organization acknowledges all the elements of occupational health and safety in developing policies and programs for the wellbeing of it's workers (WHO, 1999).

Achievement of the highest standard of safety and health at workplace is critical to eliminate or at least minimize safety and health hazards and risks (Oluoch, (2017))

### **2.1.7 Legislative Background of OSH**

The legal basis for governing OSH in Ethiopia was present since 1940 (proclamation No.58/1945 and later improved in 1964 by proclamation No.232. There are different legislations directly and indirectly related with OSH. Among them are the FDRE constitution Proclamation No. 1/1995, the labour proclamation No.377/06, OSH and working environment convention No.155/1981, public Health Proclamation No.200/2000, The Pollution Control Proclamation No 295/2005, The Environmental important assessment proclamation No299 / 2002, The Invest code proclamation No 37/1996. It states the obligation of the employer, the obligation of employees, occupational injuries treatment and addresses issues related to Decent Work which includes measures to ensure workplaces are safe, healthy and free of any danger to the wellbeing of workers.

From ILO (2002), the International Standards on Safety and Health are set by the international Organization. These standards are based on International Conventions and recommendations on occupational Safety and Health. The most important and wide ranging convention is the 155 convention of 1981 concerning occupational Safety and Health and working environment which applies to all workers in all areas of economic activities.

The convention articulates the principles for a national policy on occupational safety and health and sets out actions to be taken by the state, employer and trade unions. The policy must be given effect through the development and enforcements of laws, then must be adequate and appropriate systems of inspection, and the enforcement system must provide adequate penalties for the violations of the laws (Ng'ang'a . *et al.*, n.d).

The occupational Safety and Health Act 2007 aims at securing the safety, health and welfare of workers and the protection of persons other than the workers against the risk to safety and health

arising out of, or in connection with, the activities of persons at work. The Act sets objectives to promote and improve occupational safety and health standards.

The duties under the Act are the provisions and maintenance of plant, systems and procedures of work, these are systems and procedures of work that are safe and without risks to health. Arrangements for ensuring safety and absence of risks, to health in connection with the use, handling, storage and transport of articles and substances. The provision of such information, instructions, training and supervision as is necessary to ensure the safety and health at work of every person employed. The maintenance of any workplace under the occupier's control, in a condition that is safe and without risks to health and the provision and maintenance of means of access to and egress from it that are safe and without such risks to health. The provision and maintenance of a working environment for every person employed that is safe without risks to health and adequate as regards facilities and arrangements for the employee's welfare at work. Informing all persons employed of any risk from new technologies and imminent danger. Ensuring that every person employed participates in the application and review of safety and health measures.

Regarding policy framework, there is OSH policy in Ethiopia. But it is encompassed in other policies like the national health policy and the Economic policy. (Dawit Seblework (ILO Consultant), 2006).

The Legislations stated above are the foundation for the implementation of OSH program but are not the only success factor for OSH intervention. According to Micheli, Guido J. L 2018, the mechanisms and contextual factors should be considered for OSH program implementation. In fact, it is cited in this paper considering the legislation as barriers for intervention due to lack of detailed guidelines, lack of knowledge, inadequate OSH policy etc. which has similarity to the situation on the ground in Ethiopia. (Micheli, 2018)

In assessment of success factors in the implementation of health and safety programs (As cited by Rotich & Kwasira 2015) the right to safe and healthy working conditions is part of the broader right of everyone to the enjoyment of just and favorable conditions of work, enshrined inter alia in article 23 of the Universal Declaration of Human Rights and article 7 of the International Covenant on Economic, Social and Cultural Rights.

### **2.1.8 Minimum provisions in manufacturing**

The standards and OSH provisions at the workplace is dependent on the type of work, the level of hazard exposure and the governing policies and legislations. Generally, at any workplace, the following provisions should be available and be made practical.

Under General provisions, safety rules, policies and guidelines related to worker's safety should be clearly indicated and made known to all concerned, Pre-employment medical examination for jobs with health hazards, regular Periodic health screening to identify health ailments as a result of working condition, there should be visible signage and guarding mechanisms for hazards identified, there should also be functional Health and Safety committee, notification and keeping records of accidents and near misses, training of personnel on OSH, orientation to new recruits on safety and health and the work processes, provision of PPE, regular inspection, accident investigation and review program, first Aid facility and Emergency health services. (ILO-Manila, 2016)

The Ethiopian labour proclamation also states the minimum standards that needs to be fulfilled at the workplace by the employer and that is related to the duty of employees. An employer shall take the necessary measure to safe guard adequately the health and safety of workers; it shall in particular: Comply with the occupational health and safety requirements provided for in this Proclamation, Take appropriate steps to ensure that workers are properly instructed and notified concerning the hazards of their respective occupations; and assign safety officer; and establish an occupational health and safety committee, Provide workers with protective equipment, clothing and other materials and instruct them of their use, Register employment accidents and occupational diseases and report same to the labour inspection service, Arrange, according to the nature of the work, at his own expense for the medical examination of newly employed workers and for those workers engaged in hazardous work, as may be necessary, Ensure that the work place and premises of the undertaking do not pose threats to the health and safety of workers, Take appropriate precautions to ensure that all the processes of work in the undertaking shall not be a source or cause of physical, chemical, biological, ergonomic and psychological hazards to the health and safety of the workers implement the instructions given by the Competent Authority in accordance with this Proclamation. An employee shall: Co-operate in the formulation of work rules to safeguard the workers' health and safety, and implement same, Inform forthwith to the employer any defect related to the appliances used and incidents of injury to health and safety of workers that he is aware of in the undertaking; Report to the employer any situation which he may have reason to believe could present a hazard and which he cannot prevent on his own, and any incident of injury to health which

arises in the course of or in connection with work, Make proper use of all safety devices and other appliances furnished for the protection of his health and safety or for the protection of the health and safety of others; Observe all health and safety instructions issued by the employer or by the Competent Authority. It also states the prohibited acts; as Interfere with, remove, displace, damage or destroy any safety devices or other appliances furnished for his protection or the protection of others; or Obstruct any method or process adopted with a view to minimizing occupational hazard. (FDRE, 2019).

Thobora *et al.*, 2015 explains that employers should ensure employees are protected from hazards at work by ensuring that employees are adequately instructed and trained in safe systems of work such as safe methods for carrying out tasks, safe use of equipment or substances, use of health and safety control measures and personal protective equipment, accident reporting and emergency procedures and their responsibilities for health and safety. Employers are expected to carry out training needs analysis and then provide to employees in appropriate languages: the information, instruction, training and supervision necessary for them to work safely. In identifying training and literacy of the employees, the factory should use, hazards identified and risk assessment conducted. (Ibrahim Oluoch, June. 2017)

Training refers to instructions and practices for acquiring skills and knowledge of rules, concepts, or attitudes necessary to function efficiently in specified task situations As training objectives, recognition of job hazards, learning safework practices and appreciating other preventive measures are expected to contribute to the goal of reducing occupational risk of injury and disease. With regards to OS&H, training can consist of institution in hazard recognition and control measures, learning safe work practices and proper use of personal protective equipments and acquiring knowledge of emergency procedures and preventive actions. Training can provide information on potential hazards that can provide information on potential hazards, their control, skills to assume a more active role in implementing hazards control programs or to effect organizational changes to enhance workplace protection.(p.11) More than 100 occupational safety and Health Administration (OSHA) Standards for hazards control in the workplace contain requirements for training aimed at reducing risk factors for injuries and diseases; others limit certain jobs to persons deemed competent by virtue of special training.(Cohen A, et al,1998) as cited by (Ibrahim Oluoch, June. 2017)

### **2.1.9 The Benefits of OSH Practices**

Despite global efforts to address OSH concerns, it is estimated that 2 million work related fatalities still occur every year. In addition, there are more than 330 million occupational accidents and 160 million work related diseases that affect workers every year (As cited in Ayubu *et al.*, 2012). It is estimated that more than \$ 1.25 trillion, which is equivalent to 4% of the world's Gross Domestic Product (GDP) is lost each year due to occupational accidents and diseases. (Ayubu *et al.*, 2012)

The application of OSHP has been shown to significantly decrease the occurrence of accidents, illness, injuries and fatalities (Hussian, 2013). In addition, OSHP helps the business to demonstrate to all stakeholders that their business is socially responsible, improvements in the image, brand value and wider organization's reputation of the firm (Warner, 2013 cited in (Aithal, 2017) (Hussein, Dec, 2016) According (Abualrejal, 2016), OSHP indirectly maximizes the performance, productivity and production rate in the company by serving as motivational element and because the accident rate is reduced when safety program and practices are applied. In return, when the accident rate decreased the business cost such as health care and insurance cost also reduced, so that the company do not have to spend a lot of money on the compensation to the workers.

## **2.2 Empirical Review**

### **2.2.1 Contributing factors for safety.**

The goal of ILO promotional framework for OSH convention is to promote preventative safety and Health culture through the application of an OSHMS approach with continuous improvement. (Yangho Kim, 2016)

Muchemedzi and Charamba, 2006, as cited in Katsuro et al (2010) define occupational health as a science concerned with health in its relation to work or working environment (pp 2645). The researchers explain that accidents do not just arise from a single cause but from a combination of factors that act simultaneously; that a potentially unsafe situation does not cause an accident until someone is exposed to it. They confirm that accidents are caused by the results from poor attitudes, physical conditions and lack of knowledge or skills to enable one to work safely. They are also caused by unsafe conditions of equipment or materials.

Attitudes towards safety and accident prevention were factor-analysed to produce a three-factor model: management concern for safety; workers' response to safety; conflict between production and safety. This architecture is similar to that found in other UK manufacturing sectors. The study highlighted the role of workers' response to safety as the greatest influence on safety behaviour, rather than managers' concern for safety. Perceptions of work environment had important effects as a significant predictor of both accidents and safety behaviour. Job communication, whilst closely related to management concern for safety, was not associated with safety outcomes. Safety climate was shared across hierarchical levels, but managers felt significantly more well-informed than other employee groups. (Clarke, (2006))

### **2.2.2 Safety Management System**

According to J. Watcher and P. Yorio,(2014) the relationship of Safety Management practices and positive safety results i.e. accident reduction were tested. The investigation included engagement of workers on how these practices could be used to achieve improved safety statistics. The cognitive domain of workers needs to be taken in to consideration while planning safety programs to get positive result and enhance effectiveness. (Jan K. Wachter, 2014). In a study conducted in Hong Kong, effectiveness of safety Management System was evaluated against the current state of practice. It has revealed that commitment of senior management and competency of safety managers

found to be the key success factor. In addition, the study identified the core benefits of implementing SMS and those factors taken as a key challenge affecting negatively. (Nicole S.N. Yiu, 2018)

According to Peter Thobora and Samuel Thuita (2015) in assessing the levels of compliance of occupational safety and health risk management practices with occupational safety legislation in public institutions; OSH systems should reduce high level exposures to hazards to ensure safe work environment. This is correct as good systems are just but part of the success in implementation.

### **2.2.3 Safety Management and Safety Culture.**

Safety management and safety culture are interrelated in practical application of safety measures in the workplace. Safety culture is rarely addressed beyond organizational culture. The review was done in order to explore how traditional conceptualization of culture can be applied to workplace safety. It is very important to understand the effect of culture and the contextual variables they have on safety at the workplace. This shows safety issues go beyond designing safety implementation program. (Jason R.D. Edwards, 2013)

The main goal of OSH program implementation is growing to the development of safety culture with in the workplace. The relationship between safety culture elements identified in the review and safety performance are the key influencing factors. (Ahong He, 2012). According to Nielsen, partnership and interactions with Health and Safety Organizations can also improve the company's safety culture by focusing on safety related interactions. Culture gives people a frame of reference for how to act, think and feel in various circumstances. This study also showed evidence that safety involves many stakeholders (Nielsen, 2014).

The Occupational injuries and diseases at the manufacturing industries can decline with the added effort of employee's engagement, safe work process, adherence to regulations and inspections, making use of development of science and technology. A theoretical and practical positive change of safety culture at the national level brings efficiency and effectiveness in Safety and Health program and prevention of accidents and injuries. (Yangho Kim, 2016)

Closely related to management commitment toward safety is the significance of safety training in encouraging employees to help other employees and the organization toward complying with safety rules and procedures at work. Safety training is said to be effective when the transfer of training occurs, that is, when employees apply the knowledge and skills on safety gained by working safely

at work (Laberge et al., 2014). However, since trainees have different learning capabilities, knowledge, and skill acquisition and hence application may be different. It is in this context that safety training makes a difference to safety compliance because other employees offer a helping hand to their co-workers on the need to work safely. Vredenburgh (2002) also offered a similar suggestion when she recommended that the management uses a partner system to help orient employees in the safety, health, and quality systems. (Subramaniam, (2016))Use the "Insert Citation" button to add citations to this document.

Though Rotich & Kwasira (2015) established a positive, strong and statistically significant relationship between employee training on OHS programs and effective implementation of OHS programs, in assessing success factors in the implementation of occupational health and safety programs in tea firms in Kenya this may not be entirely true as work environment in Kaisugu Tea Factory must have had positive contribution in confirming the significance. Therefore, is key in effective implementation of OHS programs, the psychosocial aspects of OSH practices and management have greater influence on work environment as indicated by employee satisfaction.

# **CHAPTER THREE**

## **3. RESEARCH DESIGN AND METHODOLOGY**

### **3.1 Research Design**

For the purpose of the present research, a descriptive method mixed approach is adopted. A descriptive study is one in which the major purpose is a description of the state of activities as it exists at the time of research. The main characteristic of such type of research is that the researcher has no control over the phenomena or activities being investigated; he or she can only report what has happened or what is happening and perhaps provide an explanation or justification of such occurrence or occurrences (Elmabruk & Reda 2018). The term “mixed method” refers to an emergent methodology of research that advances the systematic integration, or “mixing,” of quantitative and qualitative data within a single investigation or sustained program of inquiry (JW, February,2013). The data for this study is collected based on a triangulated combination of three sources of data collection methods: observation, interviews, and questionnaire.

Selected key informants such as heads of OSH units different level managers and employees at different levels are interviewed using open-ended, semi-structured interview guidelines. Additional data is gathered by conducting a walk-through inspection without making interference or without the involvement of the researcher in the selected factories to observe and document the existing OSHM practices.

### **3.2 Sources of Data & Data Collection Techniques**

#### **3.2.1 Sources of Primary and Secondary Data**

Both primary and secondary source of data are used. The primary data is acquired through observation, interview and questionnaire survey. Whereas, secondary data such as recording and reporting system of occupational hazards, near misses and accidents of the selected factories are acquired through the detail review of factories documentation.

### **3.2.2 Data collection techniques**

A combination of questionnaire, interview and observation data collection techniques is used to collect the desirable data/information for the study. Each data collection methods address a different aspect of the research.

As stated by O’Leary (2014), the questionnaire is used in order to discover what the masses are thinking on the subject matter. Thus, a questionnaire is prepared and conducted with randomly selected employees of both factories at different levels. The questionnaire comprises of a mixture of closed and open-ended questions.

On the other hand, semi-structured interview used to collect data. Interviews are particularly useful for uncovering the story behind a participant’s experiences and pursuing in-depth information around a topic. It may also be useful to follow-up with individual respondents after questionnaires, for example, to further investigate their responses (McNamara, 1999). The main reason that the researcher intended to use semi-structured interview is to collect detailed information in a style that is somewhat conversational and delve deeply into a topic and to understand thoroughly the answers provided (Margaret C. Harrell, 2009).

The other data collection technique that is used for this research is through structured observation. The purpose to use structured observation is as suggested by O’Leary (2014), is to study specific themes or explore specific issues. The observation is done by conducting a walk-through inspection of the selected factories using checklist to detect and document the actual/existing safety practices and use of personal protective equipment by the workers during the various steps of operational processes without the involvement of the researcher. The use of questionnaires, interview and observation method enables a mix of qualitative and quantitative information to be gathered (Al Baghal, 2017).

## **3.3 Target Population, Determination of Sample Size & Sampling Methods**

### **3.3.1 Target population**

For this study the target populations are the current management and non-management staff members of both Kotebe Metal Tools Factory and Kaliti Metal Products Factory (both factories are located in Addis Ababa). The preliminary or initial survey is undertaken by the researcher before the questionnaire distributed in order to learn the total population (total staff members) of both

factories. The total population during proposal preparation was 189 for Kotebe and 392 for Kaliti. But during distribution of questionnaire, it is found to be 150 in Kotebe and 344 in Kaliti. The sample size is determined from the current population is as shown below.

### 3.3.2 Determination of Sample size

The sample size for this study is determined using the following equation as specified by (Yamane, 1976)

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

Where:

- n = Sample Size
- N = Total Population Size
- e = Acceptable Level of Error (that is 5 percent)

Source: (Yamane, 1967)

Kotebe Metal Tools Factory

Kaliti Metal Products Factory

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

$$n = \frac{150}{1 + 150(0.05)^2}$$

$$n = \frac{344}{1 + 344(0.05)^2}$$

$$n = 109$$

$$n = 185$$

### 3.3.3 Sampling method

In this study, both simple random sampling and purposive sampling methods are used. In the case of simple random sampling method subjects in the population will be sampled by a random process, using either a random number generator so that, each person remaining in the population has the

same probability of being selected for the sample (Alvi, 2014). For this study, names of the total number of population (i.e. the total number of staffs) are obtained from the human resource office and numbered alphabetically, after that the researcher will make sure that the numbers are well mixed before selecting the sample population, finally the desired number of samples will be picked by hand. This process will be used separately for each factory.

The purposive sampling technique, also called judgment sampling, is the deliberate choice of an informant by the researcher due to the qualities the informant possesses and enables the researcher to acquire the desired information to meet the objectives of the study (Dolores & Tongco, 2007, (Mark Saunders, 2007) In the purposive sampling, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (Bernard 2002, Lewis & Sheppard 2006, cited in Dolores & Tongco, 2007). In this study, key informants such as heads of OSH units, senior and first line management staffs and staff representatives are selected and interviewed deliberately depending on their role in both factories to get appropriate data.

In this study, in Kaliti Metal products factory, the human resources head, the staff clinic head and OSH representative interviewed. Likewise, in Kotebe metal tools factory, the human resources assistant and first line manager of the workshop interviewed.

### **3.4 Method of Data Analysis & Presentation**

Qualitative data that is collected are transcribed and analyzed using the thematic content analysis method. Ezzy (2000) describes this method of data analysis as a way of analyzing data by organizing it into categories on the basis of themes, concepts or similar features This was followed by checking for consistency and subsequent search for additional data whenever there was any evidence of ambiguities and lack of clarity. The procedures employed are primarily designed to reduce and categorize large quantities of data into more meaningful units for interpretation (Singleton, 1997). Therefore, the collected data are sorted through grouping into different themes according to the objectives of the study and deciding the required form to make data comprehensible.

Whereas, the quantitative data gathered and inserted into computer and analyzed by means of simple descriptive analysis method using SPSS and Microsoft Excel software. Thus, the data analyzed are presented in the form of tables, charts, and graphs and relate the information to fulfill the objectives of the study.

# CHAPTER FOUR

## 4. RESULT AND DISCUSSION

### 4.1 Self-Administered Questionnaire Result

The results obtained from the assessment of the two factories will be presented separately. There is a huge difference regarding the safety and Health conditions that is observed during the time of assessment. A total of 294 employees responded from the two factories. 109 respondents from Kotebe and 185 from Kaliti. During data cleansing, 4 questionnaires from Kotebe and 2 questionnaires from Kaliti are disqualified due to incompleteness.

#### 4.1.1 Demography

Out of the total respondents 87(82.9%) were males and 18(17.1%) were females from Kotebe and from Kaliti 165(90.2%) were males and 18(9.8) were females.

Though the number of female employees are less than men, OSH should address properly this groups at work due to their vulnerability for known reasons. It is also reflected on European Agency for Safety and Health at Work in its observatory report. (EU-OSHA, 2013)

Majority of respondents were between the age of 18 and 40 at both factories that shows majority of them are young and productive age group which suggests if OSH program is conducted properly focusing on prevention, the chance of bringing change is promising and also benefits by saving the productive workforce capital of the country.

Table 1

**Age Distribution (Kaliti)**

	Frequency	Percent	Valid Percent	Cumulative Percent
	18 to 25	22	12.0	12.0
	26 to 40	108	59.0	71.0
Valid	41 to 55	51	27.9	98.9
	Over 56	2	1.1	100.0
	Total	183	100.0	100.0

Table 2

**Age Distribution (Kotebe)**

	Frequency	Percent	Valid Percent	Cumulative Percent
	18 to 25	26	24.8	24.8
	26 to 40	51	48.6	73.3
Valid	41 to 55	25	23.8	97.1
	Over 56	3	2.9	100.0
	Total	105	100.0	100.0

### 4.1.2 Educational status

The educational status of the respondents were 4.8 percent (5) illiterate, 6.7 percent (7) elementary, 31.4 percent (33) secondary and 57.1 percent (60) at higher education level at Kotebe, while at Kaliti were found 7.7 percent (14) workers with elementary education, 29 percent (53) secondary and 63.4 percent (116) at higher education with no illiterate workers. The fact that the majority are educated, it will be one opportunity to utilize to successfully implement OSH program. Because prevention depends on the perception of risk and attitude to prevention.

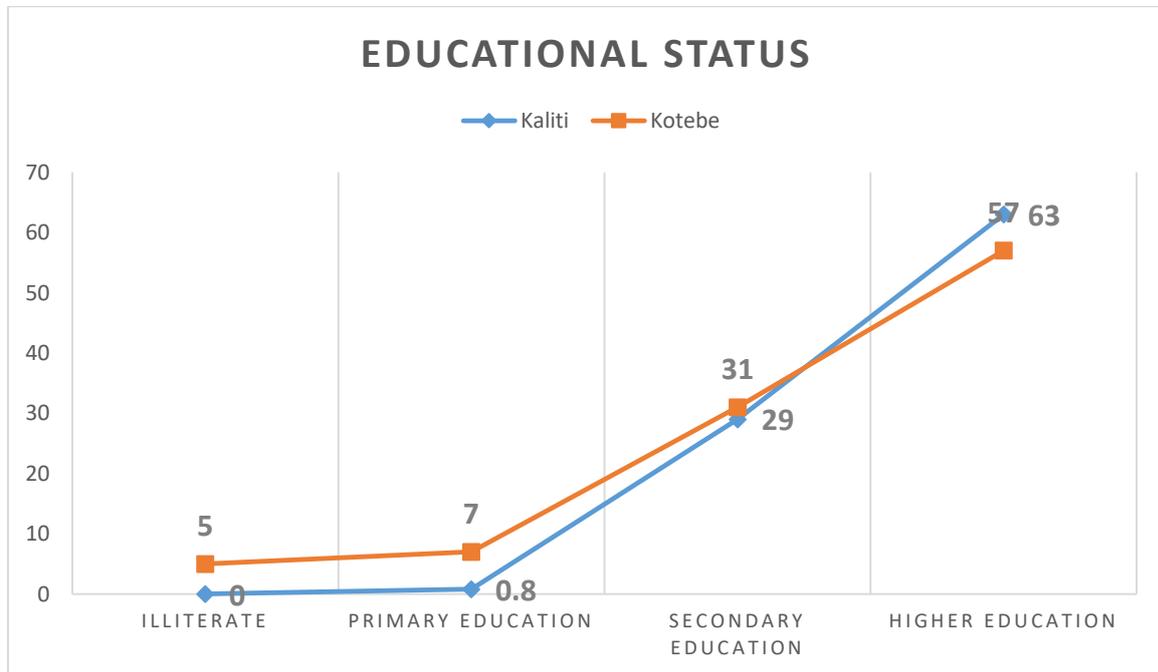


Fig 1 Educational Status of Kaliti and Kotebe metal tools factories.

### 4.1.3 Employment history

Kaliti-Majority of the respondents worked less than 10 years. 18.6 percent (34) have worked between 10 and 20 years and 15.3 percent (28) have worked for over 2 decades.

Kotebe-Majority of the respondents worked again for less than 10 years, 10.5 percent (11) have worked between 10 and 20 years and 13.3 percent (14) have worked for more than 20 years.

### 4.1.4 Level of responsibility at work

Kotebe- 42.9 percent (45) respondents are technical workers. 32.4 percent (34) are first level managers and 3.8 (4) are higher level managers. 21 percent (22) respondents are employees in administration responsibilities sales, purchasing dept. etc.

Kaliti- 48.6 percent (89) of respondents are technical workers. 21.9 percent (40) are first level managers and none of our respondents are higher level managers. 29.5 percent (54) employees work in administration responsibilities sales, purchasing dept. etc.

#### **4.1.5 Availability of OSH program**

In Kaliti, the response on the availability of OSH program is 72.1 percent (132) acknowledged its availability, 18 percent (33) replied by saying that there is no OSH program and 9.8 percent (18) do not know about it.

In Kotebe, the response on the availability of OSH program is only 30.5 percent (32) acknowledged its availability, 60 percent (63) replied by saying that there is no OSH program and 9.5 percent (10) do not know about it.

#### **4.1.6 Common health and safety risks.**

The common health and safety risks identified in Kaliti metal products factory are from machine use, extreme environmental conditions, heavy loads and dust and debris which is responded by greater than 75percent of employees. In Kotebe, only extreme environmental conditions were mentioned by greater than 75percent of employees.

The recognition of the presence of hazard is the first step of risk assessment for risk mitigation and control. Though the extent of the risk is minimal, it has equal potential to cause accident and injuries. Risk identification, prevention and mitigation strategies prevents the occurrence of accident and injuries.

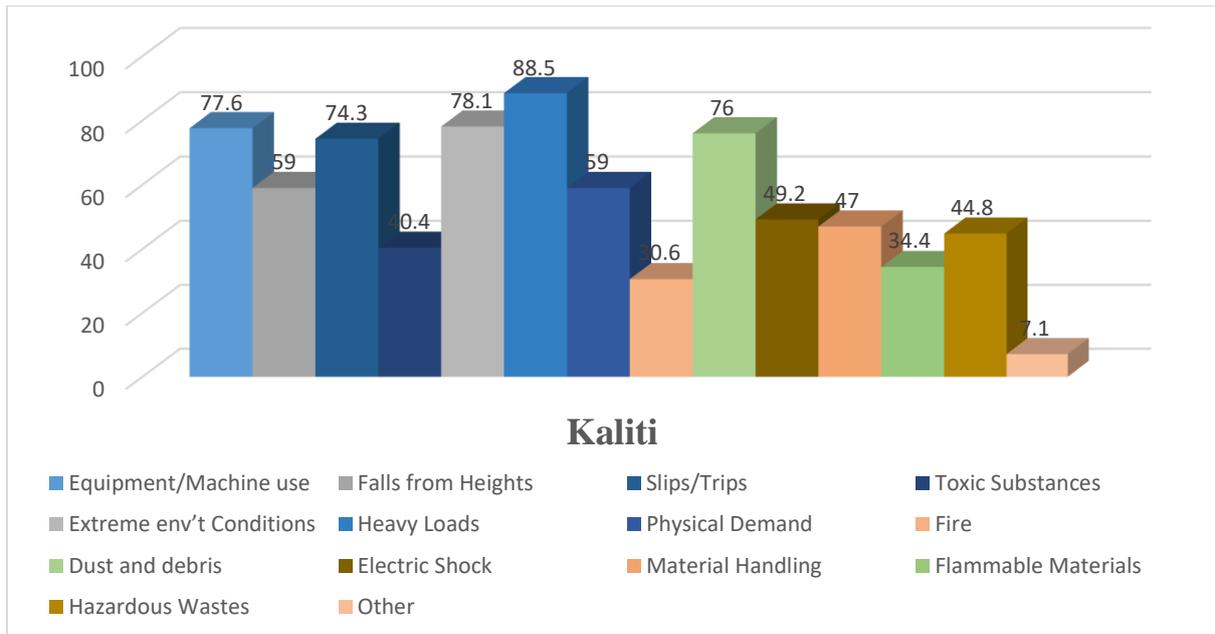


Fig. 2- Common Health Risks in Kaliti Metal Products factory.

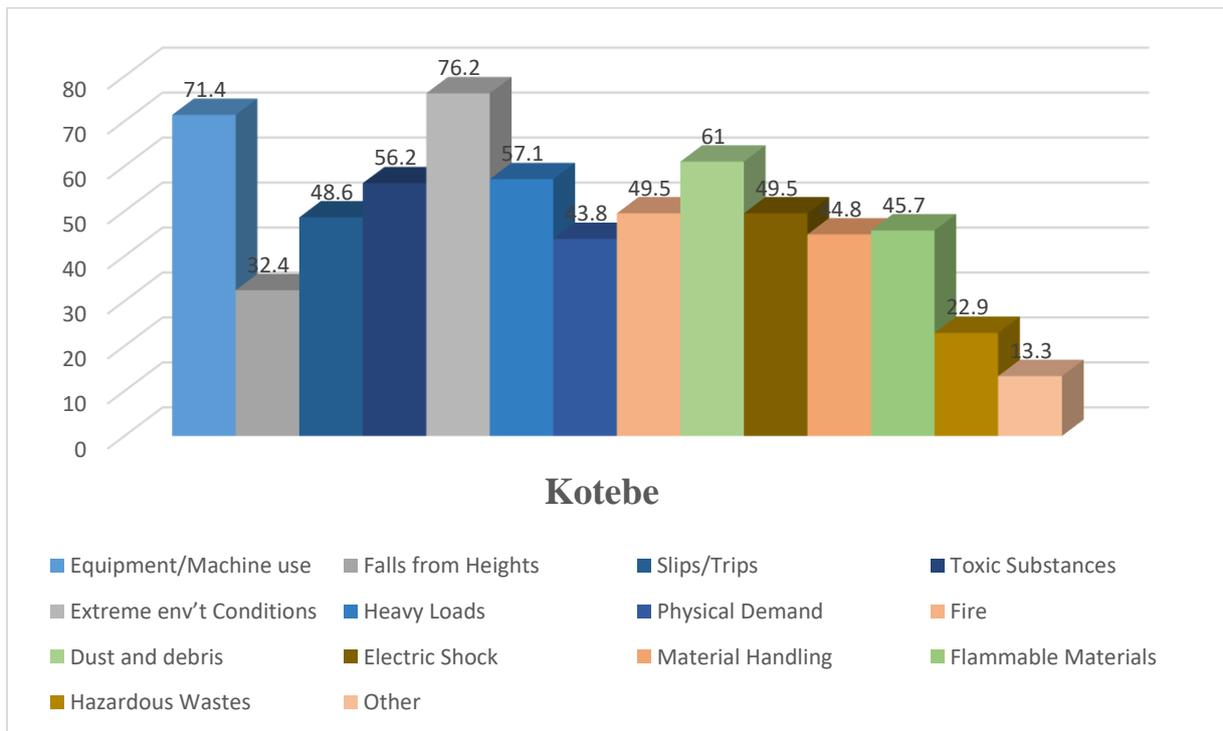


Fig. 3 Common Health Risks in Kotebe Metal Tools factory.

#### 4.1.7 Regular workplace risk assessment

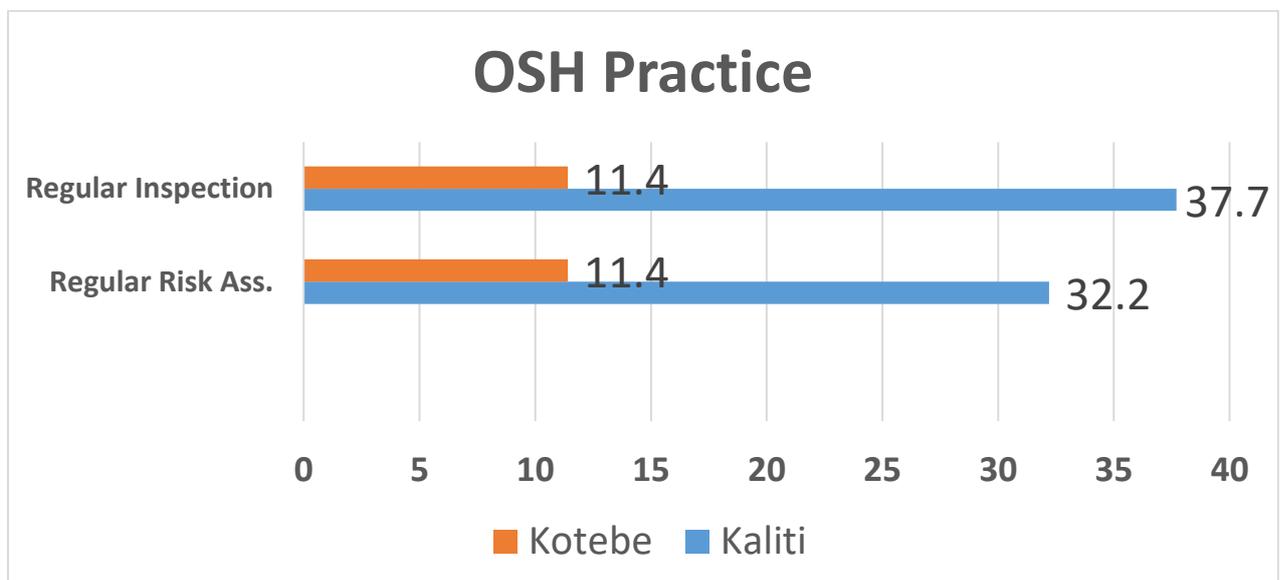
Kotebe- 11.4 percent (12) responded that workplace risk assessments are done regularly, 31.4 percent (33) responded that it has no regular program and 57.1 percent (60) said no risk assessment program.

Kaliti- 32.2 percent (59) responded that workplace risk assessments are done regularly, 38.8 percent (71) responded that it has no regular program and 29 percent (53) said no risk assessment program. Among the respondents who confirmed for the presence of workplace risk assessment, in Kotebe 13.3 percent (6) said done less than 3 month since the period of the last assessment, 13.3 percent (6) said between 3 and 6 months and 73.3 percent (33) said above 6 months, while in Kaliti, 27.6 percent (37) said less than 3 months, 17.8 percent (24) said 3 to 6 months and 54.5 percent (73) said above 6 months.

#### 4.1.8 Regular Inspection

Kotebe: 11.4 percent (12) responded that regular inspection at work are carried out regularly and 60 percent (64) not carried out at all. And 27.6 percent (29) said there is safety inspection but not done regularly.

Kaliti: 37.7 percent (69) responded that regular inspection at work are carried out regularly and 30.6 percent (56) not carried out at all. And 31.8 percent (58) said there is safety inspection but not done regularly.



## **Fig 4 Inspection and Risk Assessment practice result**

### **4.1.9 Presence of injury and illness prevention program**

The response on the presence of injury and illness prevention program at the Kotebe factory is 15.2 percent (16) said yes, 76.2 percent (80) said no and 8.6 percent (9) said that they don't know that there is injury and illness prevention program.

In Kaliti, 39.3 percent (72) said yes there is injury and illness prevention program, 51.9 percent (95) said there is no injury and illness prevention program and 8.7 percent (16) said they don't know that there is injury and illness prevention program.

### **4.1.10 Training**

Kotebe: The number of employees who took safety training are 20 percent (21) and 80 percent (84) did not receive at all. Similarly, 19 percent (20) received basic life support training and 81 percent (85) did not get the training.

Kaliti: The number of employees who took safety training are 52.5 percent (96) and 47.5 percent (87) did not receive at all. Similarly, 38.8 percent (71) received basic life support training and 61.2 (112) did not get the training.

### **4.1.11 Safety orientation during employment**

In Kotebe, it was given for 30.5 percent (32) employees and 69.5 percent (73) did not receive any safety orientation.

In Kaliti, it was given for 57.4 percent (105) employees and 42.6 percent (78) did not receive any safety orientation.

### **4.1.12 Safety meetings**

Kotebe: 15.2 percent (16) said that safety meetings are conducted and 72.4 percent (76) said no safety meetings are carried out. 12.4 percent (13) responded they didn't know. The majority of respondents said that the meeting are conducted every month.

Kaliti: 42.1 percent (77) said that safety meetings are conducted and 50.3 percent (92) said no safety meetings carried out. 7.7 percent (14) responded they didn't know. The majority of respondents said that the meeting are conducted every week.

#### **4.1.13 Presence of safety representative**

Kotebe: Safety representatives are said to be present by 40 percent (42) respondents, 53.3 percent (56) said no safety representative and 6.7 (7) don't know about it. Similarly, 33.3 percent (35) do not know to whom they should report during the occurrence of accident and 66.7 percent (70) know their contact at work during accident/injury.

Kaliti: Safety representatives are said to be present by 32.2 (59) respondents, 57.4 percent (105) said no safety representative and 10.4 percent (19) don't know about it. Similarly, 23.5 percent (43) do not know to whom they should report during the occurrence of accident and 76.5 percent (140) know their contact at work during accident/injury.

#### **4.1.14 Provision of PPE**

In Kotebe, 13.3 percent (14) have responded that they have received PPE with training, 70.5 percent (74) received but without training. And 16.2 percent (17) did not get PPE.

In Kaliti, 42.6 percent (78) have responded that they have received PPE with training, 48.6 percent (89) received but without training. And 8.7 percent (16) did not get PPE.

#### **4.1.15 Usage of PPE**

Kotebe: The respondents who always use PPE amounts to 43.8 percent (46) and 8.6 percent (9) do not use PPE. 34.3 percent (36) uses PPE sometimes and 13.3 percent (14) said do not need to use PPE for their work.

Kaliti: The respondents who always use PPE amounts to 65.6 percent (120) and 2.7 percent (5) do not use PPE. 25.1 percent (46) uses PPE sometimes and 6.6 percent (12) said do not need to use PPE for their work.

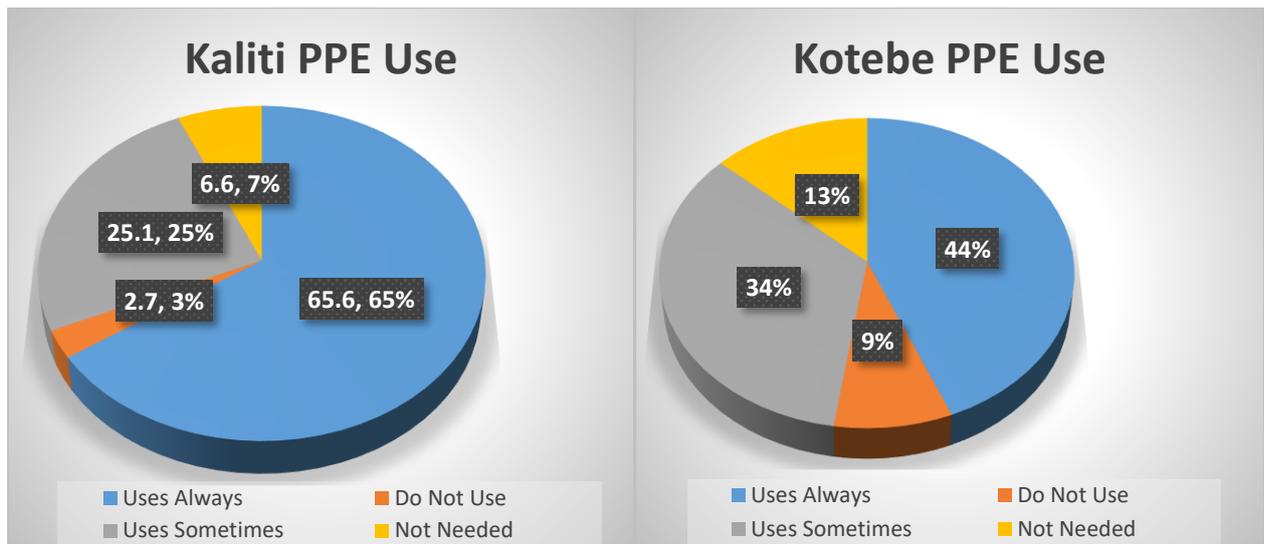


Fig 5 OSH Practice

#### 4.1.16 Health care provision

In Kotebe: Periodic health check is said to be done by 13 respondents and 92 said no health checks done. The majority responded that it is done every month, while others said every 6 months. The medical care coverage and first aid service during accident or illness are acknowledged in 88.6 percent (93) of employees and the rest 11.4 percent (12) said there is no medical care given.

In Kaliti: Periodic health check is said to be done by 67.2 percent (123) respondents and 32.8 percent (60) said no health checks done. The majority responded that it is done every year and others said every two years. The medical care coverage and first aid service during accident or illness are acknowledged in 97.3 percent (178) of employees and the rest 2.7 (5) said there is no medical care given.

#### 4.1.17 Presence of accident reporting format

Kotebe: Employees who know the availability of accident reporting format are 72.4 percent (76) and on the contrary 17.1 percent (18) said there is no format and 10.5 percent (11) do not know about reporting format.

Kaliti: Employees who know the availability of accident reporting format are 89.1 percent (163) and on the contrary 6 percent (11) said there is no format and 4.9 (9) do not know about reporting format.

#### 4.1.18 Accident and near miss registration and corrective action

Kotebe: Employees who responded there is registration and corrective action account for 28.6 percent (30) and those who said no are 51.4 percent (54). 20 percent (21) of them do not know whether the above are done or not.

Kaliti: Employees who responded there is registration and corrective action account for 37.2 percent (68) and those who said no are 41.5 percent (76). 21.3 (39) do not know whether the above are done or not.

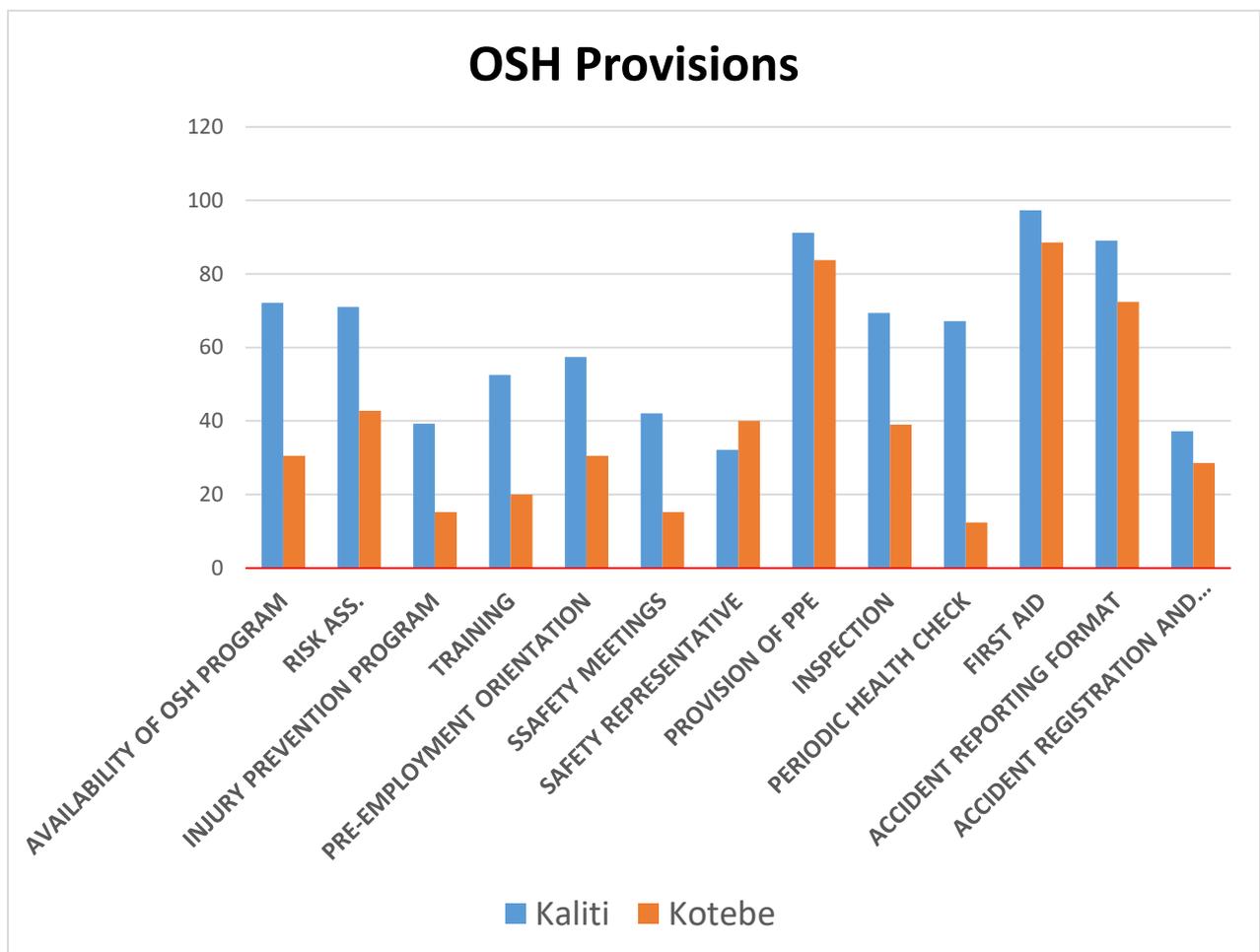


Fig 6 OSH Provisions performance of Kaliti and Kotebe.

## **4.2 Observation report**

A walk-through observation was conducted in both factories based on the checklist.

### **4.2.1 Kaliti Metal Products Factory Observation Report**

#### **Safe work practice**

Regarding safe work practices, machines were guarded properly and safe zones were marked. During my observation, lifting of heavy loads and metals were done using cranes within the workshop. The workshops are well ventilated with high roofing which contributes for the environmental safety of the working condition. This working condition minimizes the risk of worker's exposure to accident and diseases which results from machinery injury, excessive physical demand of lifting and carrying and poor environment from high temperature and poor ventilation.

#### **Use of PPE**

On the use of PPE, I have observed employees using appropriate PPE for the work performed. But few workers did not put goggles or eye cover during welding of metals. In addition, workers were seen throwing metals from height in team without ear cover, producing extreme noise, which can damage the hearing ability of workers with repeated actions. Workers have worn gloves while handling metals manually. In the painting department, the workshop is constructed only with roofing without sidewalls that reduces risk of inhalation of toxic chemicals. Again few workers were seen painting without putting masks. All staff in the workshops has put on protective clothing. As PPE is mandatory to maintain safety at work, according to my observation, the provision of supplies by the management is implemented but it is not fully implemented by the employees at work which leaves gap for accidents and injuries to occur.

#### **House keeping**

Storage items were properly stored, floors were clean and dry, and garage and whole compound were kept in order. Flammable objects like few oxygen cylinders were not secured at storage area and in the workshop, which can cause fire accident if it falls.

## **Electricity safety**

Most Electric cables are planted underground for machineries. Some cables were observed lying on the floors of the workshop and crossing the walking areas. This can cause electric and fall accident.



Fig 7 -

## **Fire protection**

Fire extinguishers are placed in the workshop area both at the entry and exit doors. The provision for fire protection is provided and it is placed at easy access for the employees to use it in case of fire accident.

## **Tools and machinery**

Machines were properly guarded with metal fence and operated from a distance point using control points and apparatus. No hand tools observed in workshop.



**Fig 8-**

### **First Aid**

First Aid boxes are placed at multiple points in the workshop and they were equipped. But no first aid kit in the car. There is well-established clinic in the compound with permanent health professionals. Medical investigations and treatments for minor illnesses and first aid for injuries are provided.

### **Additional observations**

Safety messages were posted on visible places in the workshop like “put your PPE while at work”; “safety is a priority”, etc This is an additional reminder which helps employees to maintain safety measures at all times and which shows the employer has disposed its duties.



**Fig. 6**

## 4.2.2 Kotebe Metal Tools Factory Observation Report

### Safe work practice

According to my observation on Safe work practice in kotebe, machines not guarded and no safe zones were marked. Manual lifting of loads and metals were seen in the workshop. The workshops are not well lighted and well ventilated.



Fig. 7

### Use of PPE

Concerning the use of PPE, I have observed employees working without wearing appropriate PPE for the work performed. Almost all workers are not using protective clothing and observed working with their own personal clothing. Eye protection during welding and hand gloves is not worn while they are recommended for the job. In painting department, the workshop lacks ventilation and no masks/respirators worn.

### **House keeping**

Storage items lack organization in storage areas. Hazardous chemicals are not labelled at the storage place and in the workshop. Floors were not kept clean and very old and dark from lots of smoke. Most of the tools are very old. The work environment in general is not conducive to work in.



Fig. 8

### **Electricity safety**

Electric cables are observed on the floor and crossing walking areas. There were cables kinked, not properly covered.

### **Fire protection**

Fire extinguishers are placed in few places

### **Tools and machinery**

Machines were not guarded in all areas and operating zones were not marked with safety marks and operated from a close proximity. Hand tools were observed with vibration and repeated force exertion.

## **First Aid**

First Aid boxes are available in few areas but not equipped with appropriate supplies. No trained professional to give first aid services.

## **4.3 Interview Report**

### **4.3.1 Kaliti Metal Product Factory Interview Report**

The interview was conducted using the prepared questions. The interview in Kaliti metal products factory included the human resources head, the staff clinic head and worker's representative.

According to interviewees of Kaliti metal products factory, most of OSH services are functional. The commitment from the factory management and owners is high and budget is allocated for implementation of OSH service. The provision of PPE is adequate and regular. There is a gap on regular application of PPE that is different from worker to worker.

Awareness regarding maintaining safety principles is created. For training purpose, they have used external partners like the catholic health initiative organization. They provide regular training on safety issues. An OSH representative moved out due to personal issues and they are on the process of replacing the vacant post. Workplace risk assessment and inspection has been done regularly though sometimes difficult to maintain.

The challenges regarding successful implementation of OSH program is the behaviour of employees, which emanates from lower understanding about safety and from failing to make it a priority. The HR head proudly said the factory is highly committed to the safety of its employees. Finally, they invited me to take a tour in the factory while workers were at work.

### **4.3.2 Kotebe Metal Tools Factory Interview Report**

At Kotebe, the interview was conducted with one of the first line managers, one employee and administrative worker. According to them, OSH is not integrated in their business like the other businesses of the factory. The budget allocation according to their view is very small only for buying of PPE. I have asked them why the workers are not putting on PPE if they are provided? According

to the employee, due to their low amount of remuneration, they will sell it after they are provided. They are not given hand gloves to handle chemicals and the smell from the chemical is very difficult to handle. They do not have trained safety representative but one of the workers is nominated as safety representative. Awareness trainings are not conducted and inspections are not made to enforce the practice of OSH.

As an additional resource, the student researcher had a discussion with MOLSA inspectors and their challenge to enforce the principles of OSH is that, though there are policies related to worker's safety and health, the law enforcement is not so strong and the amount of penalties and compensations after accident occurred are so small which makes business owners reluctant to give due attention to worker's safety. In addition, when the government owns the factory or business, the importance of budget allocation for safety during planning stage, is at a low priority list. The other challenge is the level of supervision and law enforcement are not the same for private and government owned businesses.

#### **4.4 Discussion**

Out of the total respondents, 90.2 in Kaliti and 82.9 percent in Kotebe were males. Studies done in developed and developing countries reported that men had a higher risk of occupational injury than women in manufacturing industries. According to the study done in textile factory, male workers were about 2.5 times more likely to report occupational injury than female workers. **(Zewdie Aderaw, 2011.)**

Majority of workers in both factories are between the age of 18 and 40 years of age. Studies have shown that the occurrence of injuries are higher at younger age group. The risk of sustaining more occupational injury among factory workers in age group below 30 years old were 1.9 times higher than workers whose age group was 30 years and above. **(Zewdie Aderaw, 2011.)** . In a similar study done by Eshetie, the highest number of work accidents occurred in the age group of 19–24 and as the age increases, the occurrence of accident has decreased. **(Berhan, Reviewing editor (2020)).**

Education is more likely to increase worker's safety and health practice that can prevent them from occupational injuries. But according to study done in Amhara region in textile factory, educational

level did not show any statistical significant association with occurrence of occupational injury. **(Zewdie Aderaw, 2011.)**

Work experience is one of the determinant factor in accident occurrence. A study done in Iran showed that the highest rate of accidents has occurred for workers with experience of 1–5 years. Also, the lowest rate of accidents was found in workers with 16–20 years' and more than 25 years' experience. In this study majority of the workers have less than 10years experience in both factories. (Rahmani, 2013 Sep; 4)

The standard OSH provisions are based on the fulfillment of the minimum provisions stated under the legislation. In all workplaces, the minimum provisions should be satisfactorily realized for OSH program to be successfully executed. The minimum provisions include; medical examination or regular Periodic health screening, there should be visible signage and guarding mechanisms for hazards identified, functional Health and Safety committee, notification and keeping records of accidents and near misses, training of personnel on OSH, Orientation to new recruits, provision of PPE, regular inspection, first Aid facility and Emergency health services.

In the performance of the two factories, significant gaps are observed that needs to be satisfied in the provision of OSH services. Almost in all elements of OSH, Kaliti did better than kotebe. The gap between the performance of the two factories is minimal in areas like accident registration (37.2%and 28.6%), first aid service (97.6% and 88.6%) and provision of PPE (91.2% and 83.8%).

As noted during observation, PPE provision though the percentage of the response is high, it was not complete for the risk involved and were not used by most employees in Kotebe. PPE use is practiced by 65.6% in Kaliti and 44% in Kotebe always and 25.1% and 34% responded that they use sometimes. The gap observed in this area has direct connection with the occurrence of accident and injury.

The availability of OSH program and its services should be known by all employees. But according to their response, 72.1% workers from Kaliti said there is OSH program and only 30.5% responded same in Kotebe. This shows that the awareness regarding safety and health is moderate in kaliti and almost none in Kotebe.

Pre-employment safety orientation is mandatory in all work areas. As it is also stated in labour proclamation of Ethiopia (1156-2019), it is the duty of the employer to ensure safety orientation is given to all employees during recruitment. The study showed huge gaps (57.4 % and 30.5%) in Kaliti and Kotebe respectively received orientation, though better performed in Kaliti.

Among the reinforcement measures of OSH, Inspection is one of the means which ensures the safety measures are in place and are implemented by all. The findings revealed that, those who confirmed inspection is done in their workplace on a regular basis and irregularly is 69.4% and 39% in Kaliti and Kotebe respectively.

Identification of hazard and risk assessment is vital in the prevention of workplace accidents and injuries in order to put in place risk control and risk elimination mechanisms. According to the result of this study, only 42.8% of respondents confirmed the presence of this activity in Kotebe and 71% acknowledged in Kaliti.

The employees are the key players in the prevention and reduction of accident rates. Their awareness should be raised using safety campaigns and trainings. Workers who ever received OSH training are only 52.5% in Kaliti and 20% in Kotebe.

The interview discovered that the commitment of the management is good at Kaliti. But In Kotebe, lacks management commitment which needs significant attention from the reinforcing bodies.

According to the findings of my observation, the working environment in general is better and the elements of OSH program and its provisions are better implemented in Kaliti though there are gap to be filled. It is also reflected on the responses of the questionnaire. But in Kotebe, the working condition and implementation of OSH elements needs attention in that, the working environment is unclean, no safety measures like machine guarding, PPE are not used by most employees and the PPE provided are not full for the risk involved. Therefore, it is difficult to say that there is OSH activity or service available in the factory.

The findings from the three data collection instruments show that there is discrepancy of findings in the working condition of Kotebe metal tools factory in that, the questionnaire findings are amplified compared to the situations on the ground realized during observation. But all the findings correlate for Kaliti metal products factory.

In appraisal of the two factories, Kaliti OSH provision and practice found to have better performance than Kotebe metal tools factory.

# CHAPTER FIVE

## 5. CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Summary

OSHM needs high level of commitment both from the management and from the employees. It needs proper allocation of budget, system, safety personnel and supplies. The extent of OSHM in place and its practice at the workplace plays a significant role in accident reduction. The commitment observed from the management of Kaliti metal products factory is remarkable which could play exemplary role for other workplaces.

For OSH program to be functional, the provision of OSH should be coupled with the proper practice and implementation of OSH principles. Kaliti metal products factory showed remarkable performance regarding the practice of OSH in the workplace. Minimal gaps were observed that needs to be corrected in the use of PPE while its provisions are available. Whereas in Kotebe metal tools factory, the practice of OSH is almost none due to lack of provision and also due to absence of reinforcement mechanisms.

Even though both factories did not perform 100 percent, Kaliti accomplished better on the minimum provisions that should be fulfilled in every workplace than Kotebe did. Therefore, Kotebe needs to put more effort, commitment, resources and reinforcement in implementation of OSH program. It needs improvement both in the provision and practice of the minimum standards for the betterment of the safety and health of employees and to reduce the rate of accident and injuries. Though Kaliti did better, it still needs to improve and work for enhanced performance by filling the gaps observed especially in reinforcing the appropriate use of PPE that were provided, in order to achieve a workplace that is safe, healthy and conducive to work.

## 5.2 Conclusions

This study revealed that the provision and practice of OSH in both factories (namely Kaliti and Kotebe metal factories) does not enable us to conclude that there is fully functional OSH program.

Extensive gaps are identified especially in Kotebe with regards to ownership of the program, lack of structurally enabling environment like safety trained manpower, OSH committee, OSH representative, safety inspectors, and the reinforcement structures. Therefore, the gap observed in both factories in the provision and practice of OSH, highly contributes for the occurrence of accidents and injuries at the workplace that increases the rate at the national and global level.

## 5.3 Recommendation

Based on the findings of this study, it is recommended to;

- Establish Strong and action oriented inspection and reinforcement mechanisms by MOLSA to practically execute the legislation put by government with regards to minimum provision and to achieve the goal of safe and healthy work environment at each workplace.
- Increase management commitment in planning, budget allocation and enforcement to accomplish OSH activities for Kotebe metal tools factory by making OSH part of the business for the safety of employees and to decrease workplace accident and injuries. Continue the commitment of management seen in Kaliti. In addition, ensure OSH implementation structures are available at the workplace like OSH committee and trained OSH representative for both factories.
- Conduct training and awareness creation activities regularly on occupational safety and health in both factories but in particular in Kotebe metal tools factory which enables employees to build knowledge based safe work practices and bring behavioral change towards safety.
- Ensure PPE provision to all employees in Kotebe metal tools factory based on their risk of exposure. Displaying clear accountability of both employer and employee on the regular use of PPE is suggested.
- Perform regular inspection procedures with the aim of risk identification and risk mitigation strategies by trained safety professional is recommended for both factories.
- Share experience on OSH management between the two factories. This is highly encouraged for Kotebe metal tools factory.

## **5.4 Limitations of the study**

The findings of this study have to be seen in light of some limitations. The descriptive design used for this study can only show the current state of the variables without showing their influence or relating them to each other. The sample size taken for this study is small for generalization of the results to other metal manufacturing industries. The results of this study can only be related to the target population of the study i.e. kaliti metal products factory and Kotebe metal tools factory. During data collection, the study population of Kaliti metal products factory were working in three shifts. The shifts were; 6am-2pm, 2pm-10pm and 10pm-6am. The employees working from 10pm-6am were not included during data collection due to the inconvenience of the timing. The number of employees found within the two factories during the time of data collection showed a difference from the time of proposal development. This required amendment of study population and sample size.

## **5.5 Future Research**

The following future areas of research are proposed from this study that can help to improve the commitment of employees and employers for the effective implementation of OSH program.

1. Employee behavior in the development of safety culture.
2. Management perception versus cost effectiveness of OSH program (evidence based).

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# **APPENDIX**

## **Introduction for Administration of Questionnaire.**

**JIMMA UNIVERISTY**  
**COLLEGE OF BUSINESS AND ECONOMICS**  
**DEPARTMENT OF MANAGEMENT**

Date \_\_\_\_\_

Dear Participant :

My name is Menbere Teklu and I am a master's student in Business Administration at Jimma University. I am required by the university to complete a research in partial fulfilment of my degree. I am inviting you to participate in this research study by completing this questionnaire. The following questionnaire will require approximately 15min to complete. There is no compensation for responding nor is there any known risk. In order to ensure that all information will remain confidential, please do not include your name. If you are willing to participate in this survey, please answer all questions as honestly as possible. Participation is strictly voluntary and you may refuse to participate at any time.

The data collected will provide useful information on the current status of the working condition of the employees and on the level of implementation of health and safety measures by all. This study will benefit your factory and others working in similar manufacturing industries by giving information on the gaps identified for correction. The end goal of this survey is to contribute for the improvement of the safety and health of employees at different sectors. Completion and return of the questionnaire will indicate your willingness to participate in this study. This study will be carried out by me under the guidance and supervision of Mr Emnet Negash and Mr Mohammad Yasin. Thank you for taking your time to assist me in my educational endeavours.

## Self-administered Questionnaire (English)

1. Sex M\_\_\_ F\_\_\_
2. In which age category do you belong?
  - a) 18-25 yrs.
  - b) 26-40yrs
  - c) 41-55yrs
  - d) >55yrs
3. Educational status
  - a) Illiterate
  - b) Elementary school
  - c) High school
  - d) Higher education
4. How long have you worked in this factory?
  - a) <10yrs
  - b) 10-20yrs
  - c) >20yrs
5. At what level of responsibility do you work?
  - a) Senior management
  - b) Middle and lower level management
  - c) Technical staff
  - d) Other
6. Is there a safety and health program in your factory?
  - a) Yes
  - b) No
  - c) Don't know
7. What are the common health and safety risks in your workplace?

Please check all that apply:

- \_\_\_ Use of, or malfunction of, equipment or machines
- \_\_\_ Falls from elevation
- \_\_\_ Falls on the same level—trips or slips
- \_\_\_ Exposure to toxic substances, hazardous waste, or toxic gases
- \_\_\_ Exposure to extreme heat, cold, noise or vibration
- \_\_\_ Lifting heavy loads
- \_\_\_ Work postures, physical working demands and repetitive movements
- \_\_\_ Fires or explosions
- \_\_\_ Flying particles, dust or debris
- \_\_\_ Electric shock

\_\_\_\_\_Materials handling hazards

\_\_\_\_\_Hazardous materials (combustible or flammable liquids or gases)

\_\_\_\_\_Hazardous waste handling

\_\_\_\_\_None of the above

\_\_\_\_\_Other

8. Does your establishment regularly carry out workplace risk assessments?

- a) Yes
- b) No
- c) Not regularly

9. When was the last workplace risk assessment carried out?

- a) < 3 months
- b) 3-6 months
- c) > 6months
- d) Don't know

10. Does your department have an injury and illness prevention program?

- a) Yes
- b) No
- c) Don't know

11. Have you had training about safe and healthy work practices?

- a) Yes
- b) No

12. Are you trained for Basic life support (CPR)?

- a) Yes
- b) No

13. Does your department have any safety meetings?

- a) Yes
- b) No
- c) Don't know

If yes, how often\_\_\_\_\_.

14. Does your department have a designated safety representative?

- a) Yes
- b) No
- c) Don't know

15. Do you know who to contact in your department in case of an emergency?

- a) Yes
- b) No

16. Were you given health and safety orientation after employment and before you start job?

- a) Yes
- b) No

17. Are you provided with appropriate PPE (personal Protective Equipment) for the work you do with proper instruction on how and when to use it?

- a) PPE provided with instructions.
- b) PPE provided but without instruction.

- c) No PPE provided
18. Do you regularly use PPE while at work?
- a) Yes
  - b) No
  - c) Not regularly
  - d) Not applicable
19. Is there regular inspection including the use of PPE?
- a) Yes
  - b) No
  - c) Not regular
20. Is there periodic health assessment or medical check-up?
- a) Yes
  - b) No
- If yes, how often? \_\_\_\_\_
21. Is there accident reporting format known by employees?
- a) Yes
  - b) No
  - c) Don't know
22. Are incidents and near misses registered and corrective actions taken timely in order to prevent accident?
- a) Yes
  - b) No
  - c) Don't know
23. Is there provision of First Aid and curative treatment for work related injuries/accident?
- a) Yes
  - b) No

## Self-administered Questionnaire (Amharic)

የስራ ቦታ ጤናና ደህንነት መጠይቅ ቅጽ

1. ፆታ ሀ. ወንድ ለ. ሴት
2. በየትኛው የዕድሜ ክልል ነዎት?  
ሀ. ከ18 – 25 ለ. ከ26-40 ሐ. ከ41 – 55 መ. ከ 56 በላይ
3. የትምህርት ደረጃ  
ሀ. ያልተማረ ለ. አንደኛ ደረጃ ሐ. ሁለተኛ ደረጃ መ. ከፍተኛ ደረጃ
4. በዚህ ፋብሪካ ለምን ያህል ጊዜ ሰሩ?  
ሀ. ከ 10 ዓመት ያነሰ  
ለ. ከ 10 – 20 ዓመት  
ሐ. ከ 20 ዓመት በላይ
5. በየትኛው የሀላፊነት ደረጃ ነው የሚሰሩት?  
ሀ. በከፍተኛ አመራር ሐ. የቴክኒክ ሰራተኛ  
ለ. በመካከለኛ እና የቅርብ ተቆጣጣሪ መ. በሌላ የስራ ዘርፍ
6. በፋብሪካችሁ ውስጥ የሰራተኛ ጤናና ደህንነት እንክብካቤ ፕሮግራም አለ ወይ?  
ሀ. አለ ለ. የለም ሐ. አላውቅም
7. በስራ ቦታዎ ላይ የተከሰቱ ወይም ሊከሰቱ የሚችሉ የአደጋ ስጋቶች የትኞቹ ናቸው?  
\_\_\_\_\_ ከማሽን /የስራ መሳሪያዎች በትክክል ካለመስራት የሚመጣ  
\_\_\_\_\_ ከከፍታ የመውደቅ አደጋ  
\_\_\_\_\_ ከመንሸራተት / መደናቀፍ የተነሳ የመውደቅ አደጋ  
\_\_\_\_\_ ከተለያዩ መርዘማና ጎጂ ለሆኑ ቆሻሻዎችና መርዘማ ጋዞች መጋለጥ  
\_\_\_\_\_ ከፍተኛ ሙቀት፤ ቅዝቃዜ እና ለድምፅ ብክለት መጋለጥ  
\_\_\_\_\_ ከፍተኛ ክብደት ያላቸው ነገሮችን ከማንሳት  
\_\_\_\_\_ በስራ ወቅት የምንጠቀመው ሀይልና ድግግሞሽ እንዲሁም አቀማመጥ  
\_\_\_\_\_ የእሳት ወይም የፍንዳታ አደጋ  
\_\_\_\_\_ ከአቧራ ብናኝ የተነሳ ያለ የጤና መታወክ  
\_\_\_\_\_ የኤሌክትሪክ አደጋ  
\_\_\_\_\_ ለጤና ጎጂ የሆኑ ነገሮችን አያያዝ ጉድለት የሚመነጭ  
\_\_\_\_\_ ተቀጣጣይ ባህሪ ካላቸው ፍሳሾች ወይም ጋዞች ት የሚመነጭ  
\_\_\_\_\_ ጎጂ ቆሻሻዎች አወጋገድና አያያዝ  
\_\_\_\_\_ ሌላ
8. በፋብሪካችሁ ውስጥ በቋሚነት ያለውን የአደጋ ተጋላጭነት መጠን ምልክታ ይደረጋል ወይ ?

- U. በቋሚነት ይደረጋል                      ለ. አይደረግም                      ሐ. ቋሚ የሆነ ፕሮግራም የለውም
9. መልስዎ ይደረጋል ከሆነ መች ነበር የመጨረሻው የአደጋ ተጋላጭነት ምልክታት የተካሄደው?
- U. ከ 3 ወር ያነሰ                      ለ. ከ 3 – 6 ወር                      ሐ. ከ 6 ወር በላይ
10. በስራ ክፍልዎ የጤና መታወክ (የበሽታ) እና የአደጋ መከላከያ ፕሮግራም አለ ወይ ?
- U. አለ                      ለ. የለም                      ሐ. አላውቅም
11. በስራዎ ላይ የስራ ደህንነት እና ጤንነት መጠበቂያ ስልጠና ወስደዋል?
- U. አዎ                      ለ. አይ
12. በአደጋ ጊዜ የመጀመሪያ የህይወት አድን ስልጠና ወስደዋል ?
- U. አዎ                      ለ. አይ
13. በስራ ክፍልዎ የስራ ደህንነት በተመለከተ ውይይት ይካሄዳል ?
- U. አዎ                      ለ. አይ                      ሐ. አላውቅም
- ከላይ በቁጥር 13 ላለው ጥያቄ መልስዎ አዎ ከሆነ በየስንት ጊዜው \_\_\_\_\_
14. በሚሰሩበት ክፍል የስራ ደህንነት ተወካይ / ኃላፊ አለ ወይ ?
- U. አለ                      ለ. የለም                      ሐ. አላውቅም
15. በአደጋ ጊዜ በክፍልዎ ለማን እንደሚያሳቁ ያውቃሉ?
- U. አዎ                      ለ. አላውቅም
16. በቅጥር ጊዜ ስራ ከመጀመርዎ በፊት ከአደጋ ራስዎን እንዴት መጠበቅ እንደሚችሉ ገለፃ ተደርጎልዎታል ?
- U. አዎ                      ለ. አይ
17. ለሚሰሩት ስራ የሚሆን ከአደጋ ራስን መጠበቂያ ልብስ እና መከላከያ ቁሳቁሶች ከአጠቃቀሙ ጋር ስልጠና አግኝተዋል ?
- U. አልባሳትና ቁሳቁስ ከስልጠና ጋር አግኝቻለሁ  
 ለ. አልባሳትና ቁሳቁስ እንጂ ስለአጠቃቀሙ ስልጠና አላገኘሁም  
 ሐ. አልባሳት፤ ቁሳቁስም ሆነ ስልጠና አላገኘሁም
18. በስራ ላይ ሲሆኑ የደህንነት መጠበቂያዎች ን ይጠቀማሉ?
- U. አዎ ሁል ጊዜ እጠቀማለሁ                      ለ. አልጠቀምም                      ሐ. አንዳንዴ እጠቀማለሁ
- መ. መጠቀም ለስራዬ አያስፈልግም
19. በስራ ወቅት በቋሚነት የስራ ላይ ምልክታት የደህንነት ቁጥጥር ይካሄዳል ?
- U. አዎ                      ለ. አይ                      ሐ. በቋሚነት አይደለም
20. በተወሰነ ጊዜ የጤና ምርመራ እንዲያደርጉ ይደረጋል ?
- U. አዎ                      ለ. አይደረግም
- የሚያደርጉ ከሆነ በየስንት ጊዜው \_\_\_\_\_
21. አደጋ በሚደርስበት ጊዜ የሚሞላ ቅፅ መኖሩን ያውቃሉ?
- U. አዎ                      ለ. አይ                      ሐ. አላውቅም
22. አደጋና የአደጋ ተጋላጭነት ሙከራዎች ሲከሰቱ ተመዝግቦ ለወደፊቱ አደጋ እንዳያስከትሉ ወይም አደጋው እንዳይደገም የማስተካከያ እርምጃ ይወሰዳል?
- U. አዎ                      ለ. አይ                      ሐ. አላውቅም
23. በአደጋ ( በድንገተኛ ህመም ) ጊዜ የመጀመሪያ እርዳታ እንዲሁም የህክምና አገልግሎት ያገኛሉ ወይ?
- U. አዎ                      ለ. አይ

# Observation Checklist

## JIMMA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF MANAGEMENT

Date: \_\_\_\_\_

Location/Department: \_\_\_\_\_

Yes = Satisfactory    No = Unsatisfactory, needs attention					
Yes	No	Safe Work Practices	Yes	No	Fire Protection
		Use of machine guards Proper manual lifting Smoking only in safe, designated areas Proper use of air hoses Other: _____			Fire extinguishers Proper type/location Storage of flammable materials Other: _____
		<b>Use of Personal Protective Equipment</b>			<b>Tools and Machinery</b>
		Eye/face protection Footwear Gloves Protective clothing Head protection Aprons Respirators Other: _____			Lawn mowers Power tools Hand tools Snow blowers Machine guarding Belts, pulleys, gears, shafts Oiling, cleaning, adjusting Maintenance, oil leakage Other: _____
		<b>Housekeeping</b>			<b>First aid</b>
		Proper storage areas Proper storage of flammable material (oily/greasy rags, etc.) Proper disposal of waste Floors (clean, dry, uncluttered) Maintenance of yards, parking lots Other: _____			First aid kits in rooms/vehicles Trained first aid providers including CPR Emergency numbers posted All injuries reported Other: _____

		<b>Electrical Safety</b>			<b>Other:</b> _____
		Machines grounding/GFI Electrical cords Electrical outlets Other: _____			SDS/Labels Dust/vapour/fume control Safe use of ladders/scaffolds New processes or procedures carried out AED (automated external defibrillator) Other: _____

Notes:

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## **Interview Questions for Key Informants.**

**JIMMA UNIVERISTY**  
**COLLEGE OF BUSINESS AND ECONOMICS**  
**DEPARTMENT OF MANAGEMENT**

### **Questions.**

1. Is there functional occupational health and safety service with in this factory?
2. If yes, what are the commitment made by the management for this program?
3. What are the challenges for the successful implementation of OSH program?

#### Source:

1. [Osha.europa.eu/questionnaire\\_EN.pdf](https://osha.europa.eu/questionnaire_EN.pdf)
2. [CCOHS.ca](https://www.ccohs.ca)
3. [UPTE-CWA health and safety survey \(surveymonkey.com/r/H8PS7HY\)](https://www.surveymonkey.com/r/H8PS7HY)