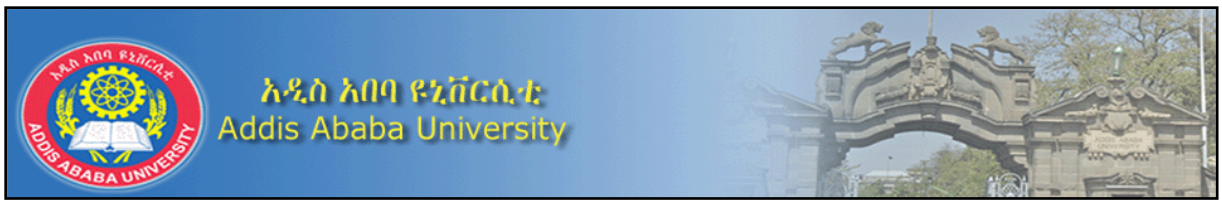

Effectiveness of Occupational Safety and Health Management Systems:

(In the case of Zamra construction Company)

A Thesis submitted to Addis AbabaUniversity, School of commerce, graduate studies in partial fulfillment of the requirements for Degree of Master of Arts in Human ResourceManagement

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School of Commerce

Effectiveness of Occupational Safety and Health Management System

In the Case of Zamra Construction Company

By

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Approved by Board of Examiners

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External Examiner	**Signature**	**Date**

Declaration

I, Simret Metaferia, hereby declare that the project entitled "E***ffectiveness of Occupational Safety and Health management system in Zamra Construction Company: A case of Zamra Construction Company***" is my original work and has not be presented for adegree in any other university and that all sources of material used for the project have been Acknowledged accordingly.

_____ _____

Name Signature

Certification

This is to certify that SimretMetaferia has properly completed her research work entitled "***Effectiveness of Occupational Safety and Health Management System": In the case of Zamra Construction Company***" under my supervision. In my opinion, her project work is appropriate to be submitted as a fulfillment requirement for the award Degree of MastersofArts in Human Resource Management.

Tariku Jebena (PhD.)

Thesis Advisor

_____

Signature andDate

Acknowledgement

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SimretMetaferia

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ACRONYMS

HR	**Human Resource**
HSE	**Health and Safety Executive**
ILO	**International Labor Organization**
MOLSA	**Ministry of Laour and Social Affairs**
PPE	**Personal Protective Equipment**
POPEA	**Policy, Organizing, Planning & implementation, Evaluation and Action**
OSHMS	**Occupational Safety and Health Management Systems**
OSH	**Occupational safety and Health**
WHO	**World Health Organization**

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ABSTRACT

Human capital is the major reason for the success and failure of any business organization. Thus in order to get the most out of it, workers should be safe and healthy and their work environment should be conducive for operation activities. The construction industry is an important part of the economy in many countries and is oftenseen as a driver of economic growth especially in developing countries. Owing to its relatively labour intensive nature, construction works provide opportunities for employment for a wide range of people skilled, semi-skilled and unskilled. Despite its importance, construction industries are the most hazardous industries both in industrialized and industrializing countries. However, knowledge on how health and safety risks are managed on construction sites is limited awareness. Hence the researcher inspiredto investigate the effectiveness of OSHM at Zamra Construction Company.This study was conducted to examine overall effectiveness of Occupational Safety and Health management systems in particular case of ZamraConstruction CompanyinApril 2015 at six company's construction sites and its Head Quarter in Addis Ababa city. A total of 92 building construction workers were included in the study by using simple random sampling technique. Primary data were collected through structured questionnaire and semi-structured interviews. The collected data were entered and analyzed using Statistical Package for the Social Sciences (SPSS) version 20.0. To assess the effectiveness of OSHMS at ZamraConstruction Company, Descriptive statistics used to analyze the data. Mean of independent variables were computed and interpreted.

This study finding indicated that in Zamra construction company, Overall occupational health and safety management systems seemspremature stage of its effectiveness.

Key words

Occupational safety,occupational health, management system, construction, effectiveness

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

According to Lynda (2012) a management system is a proven framework for managing and continually improving the organizations to improve their environmental performance through a process of continuous improvement; an oversimplification is “plan, Do, Check, Act” involve interactive trials, with particular attention paid to what did not work as intended. Rotheretal, (2010)stated that Occupational Safety and Health Management Systems (OSHMS) also provide structure part of improved communication, accomplishment of goals and development of personnel and improved of business processes.

According toInt.J.Curr.Res.Aca.Rev. (2014) Occupational Safety and Health Management System is best viewed as an organizing framework that provides direction for compliance with the OSH requirements pursuant to national law and regulation and OSHMS contain main elements policy, organizing, planning and implementation, evaluation and action for improvement (POPEA).

Worldwide, occupational diseases and on-the-job accidents have become one of the leading causes of human fatalities (Amal, 2012). According to ILO estimates (2008) a total of 2.34 million occupational fatalities occur every single year out of which 2.02 million deaths are caused by various types of work related diseases and the rest 321,000 are due to accidents that occur in the work place, which corresponds to a daily average of more than 5,500 deaths.

Amal (2012) pointed out construction is one of the important industries employing a large number of people on its workforce and wide range of activities is involved in it whereas, it is also one of the hazardous sector regarded as one of the most dangerous occupations, construction work can be considered anything but fully safe.

Barry et al, (1994) stated that there are few good statistics on the occurrence of occupational related illnesses and injuries in developing countries or on the magnitude or degree of health

and resources for occupational health and safety in developing countries as well as the inherent difficulty in diagnosing obtaining data on work related health problems.

According to Mamo et al.(2008) A significant number of people are working in construction activities and have different types of health problems relating to their work and workplace environment

In Ethiopia, the issue of governing safety and health at work on legal dates back to 1940s when the first legal instrument Proclamation No. 58/1945 was promulgated; there is no consolidated effort, in the country in order to support the implementation of occupational safety and health management through enactment of legislation and policy (Dawit, 2006).

Poor management of workplace safety and health issues in such environment can lead to work-related ill health and to high levels of absence which results different costs and burdens (Abdi, 2013).

According to Amal (2012) the construction industry has been considered an accident prone industry. Alarming statistics indicate that the construction industry accounts for 55,000 fatal injuries each year. That is because construction sites are often filled with potential hazards that can lead to serious injury or death.

It is estimated that construction workers are three times more likely to be killed and twice as likely to be injured as workers in any other occupation (Mamo et al. 2008). MoreoverIn developing countries the occupational health and safety hazards faced by construction workers are greater than those in industrial countries.

Ibid(2008) The Ministry of Health reported a prevalence rate of 723 injuries per 1000 exposed workers out of 16,610 large scale industrial workers in Addis Ababa. Though, there is lack of data about estimation, evaluation, and intervention of work related health problems, accidents and injuries among construction workers.

Zamra construction company, established in 1992 E.C. started its business as grade 5 construction contractor and has rapidly as a grade-1 Building Construction Company, it has been playing a significant role in improving quality in the construction sector. Zamra has

successfully completed 50 projects of different size since its establishment. At the moment Zamra has 25 ongoing projects in the country i.e.Mekele, Gonder, Bahir Dar, Dessie, Hawassa, and Addis Ababa. The Company entirely employed 9050 workers. However, Zamra Construction Company recognized and has been practicing Occupational safety and health management system since 2010. The company has assigned safety officer at head office level, health staff and safety crew at construction site for Occupational safety and health management.

Therefore, this research intended to assess the effectivenessof Occupational safety and health management systems from one of this hazardous construction sector specifically atZamraConstruction Company.

1.2 Statement of the problem

The development of health and safety provision is to a large extent interrelated with the development of human resource management itself (Armstrong, 2011). Employee health and safety is an integral component of Human Resource and business practices and safe and health working place is more productive and makes good business sense (Derek, Laura and Stephen, 2008).

However, Occupational Health and Safety have rapidly become a major area of risk for all organizations, requiring a systematic approach to both accident prevention and legal risk protection *(ILO-OSHMS, 2011)*.

Besides, Choudhry and Fang, (2007) stated that construction is always risky due to outdoor operations, work-at height, complicated on-site plant machinery and equipment operation coupled with worker's attitudes and behaviors towards safety. From a practical point of view health and safety in construction is about using appropriate means to ensure workers are both safe and healthy. However, in a construction environment the situation is all the more challenging (Aoife and Alistair, 2013).

As Stephen (2006) emphasized that due to poor Occupational safety and health management systems every year many construction site workers are killed or injured as a result of their

work and others suffer ill health. Thus, construction workers and their families will continue to witness the unnecessary injuries, pain and suffering that isso tragically affect the industry.

High rates of injury are primarily due to inadequate, non-existence or a breakdown in the existing Occupational safety and health management system (Benjamin, 2008). Hence the application of an 'effective' OSH management can lead to safer systems of construction and reduce incidence of injuries and work related diseases (Davis and Tomasin, 1996).

The unsatisfactory OSH record of the construction industry has always been highlighted, because the OSH managementsystem is a neglected area and a function that has not been pursued systematically in the construction industry (Sarah, 2012).

According to Ganapathi (2013) in spite of the high costs of work accidents, many construction companies adopt as their only health and safety management systems the compliance with mandatory regulations. However only being in compliance with these regulations might not be sufficient to guarantee excellence in health and safety performance as they cover only minimal preventive measures ibid(2013).

In Ethiopia, Ministry of Labor and Social Affairs has been revised safety and health guideline since 1996 E.C (MOLSA 377/1996). According to the report from Addis Ababa region MOLSA Bureau, the OSHMS guideline is not adequately implemented yet in most organization, particularly on construction industries and the Bureaucould not adequatelyinspect the practicality due to shortage of subject matter expert and budget.

However, ensure the safety and health management system implementationis important and must be applied in any organization specifically in construction companies but, ignoring safety can result in accident and ill-health which not only losses of the profits but it also crippling of the company.

Accordingly, Zamra construction company employees claim that Personal Protective Equipment is provide them but not specified for the type of work and not suitable for their work activities. Moreover, as per the interview conducted with the company's Safety officer, the researcher found out not for all employees provide standard safety shoes and gloves,

there is no pre-planned budget for health and safety issues, PPE has not purchase on time. Training in the area of safety and health has been provided twice in a year. However, the training is not consider all employees who are equally exposed for the occupational hazards rather it is provided for selected individuals in a certain groups and round to others periodically. Thus, in such scenario an employee might stay for a year or more without having any proper training but performing risky activities that expose them for work related accidents. In addition to this, there is no safety committee in the organization and employees have no opportunity to discuss about their workplace safety and health managementissues with the company's management. In general, the organizationmanagement and employees have less awareness about OSHMS. Having poorly implemented safety and health management system costs both the employee and the employer. Hence this research paper assesses the effectiveness of OSHMS in particular ZamraConstruction Company.

1.3 Basic Research Questions

This research will try to answer the following questions;

1. To what extent does the Occupational safety and health management system appropriately developed as a policy at Zamra?
2. How practically the management committed to address the Occupational safety and management?
3. What is the degree of employee's involvement in Occupational safety and health management system practices?
4. What is the level of inspection and audit done with regard to Occupational safety and health management system?

1.4 Objective of the study

1.4.1 General Objective

The overall objective of the study was to examine the effectiveness of occupational safety and health management systems in Zamra Construction Company.

1.4.2 Specific objective

The specific objectives of this study were:

1. To explore the level of appropriate occupational safety and health management systempolicy at Zamra construction company
2. To examine the degree of management commitment towards occupational safety and health management system
3. To explore the extent of employees involvement in occupational safety management system practice
4. To investigate the degree of inspection and audit in line with occupational safety and health management system at Zamra construction company

1.5 Definition of Terms

Occupational safety and Health Management Systems:OSHMS in the context of construction is the discipline of preserving the health of those who build, operate, maintain and demolish engineering works and of other affected by those works(Ahmadon et. al., 2006).

Occupational Safety and Health Management: includes Health and Safety policies and programs that are concerned with protecting employees and other people affected by what the company produces and does against the hazards arising from their employment or their links with the company (Armstrong, 20110).

Occupational safety and health: According to WHO(1995), occupational safety and health can be defined as a multidisciplinary activity aiming at:

- Protection and promotion of the health of workers by eliminating occupational factors and conditions hazardous to health and safety at work
- Enhancement of physical, mental and social well-being of workers and support for the development and maintenance of their working capacity, as well as professional and social development at work
- Development and promotion of sustainable work environments and work organizations

Occupational health: Occupational health is a multidisciplinary activity aimed at protection and promotion of the health of the workers; the development of health and safe work andwork environment and the enhancement of the physical mental & social well-being of workers & support for the development &maintenance of their working (Barry et al (1994).

Effectiveness: The degrees to which objectives are achieved and the extent to which targeted problems are solved without reference to cost; in short, effectiveness means "doing the right thing" (retrieved from BusinessDictionary.com).

1.6 Variables of the Study

Independent variables of the study were OSHMS policy, management commitment, employee involvement, safe work practices and procedures, Health and safety work place inspection and audit, health and safety consultation.

Dependent variable: Occupational Safety and health management system effectiveness

1.7 Significance of the study

Since occupational safety and health data collection and synchronization is at its infancy level in Ethiopia, much is not known about the extent of injuries sustained, fatalities and diseases contracted by employees from their respective work places (Zekarias 2013). Whereas the above statement might hold true for as many industries as one can imagine, the researcher choose to give especial attention to the construction industry which is currentlyundergoing in a vast rate in our country and is one of the most risk carrying and most fatal and injurious industries that can expose the worker at large.

Therefore, the researcher believes that this researchwill have practical significance for the following reasons:

- ☞ The understudycompany can look into its current occupational safety and health practice and take appropriate measure that greatly benefit for its future action.
- ☞ The study also benefits others who are in need to review and make an informed decision regarding their safety and health management system.
- ☞ It comes up with possible recommendation(s) that contribute to the effectiveness of OSHM in the understudy or other same industries.

- ☞ The findings can be used as a reference material for both academicians and practitioners and may initiate other interested researchers to carry out more extensive studies in the similar industry.

1.8 Delimitation/Scope of the study

Occupational safety and health is the issues of all field of workers, the researcher was focused on assessing the effectiveness of single building construction company's Occupational health and safety management systems.The research was limited to describing the existing fact regarding to effectiveness of Occupational Safety and Health Management Systems. This research was conducted atZamraConstruction Company's head office and current ongoing construction projects in Addis Ababa one-time study in April 2015.Questionnaires and Semi-structured interview wereused in order to gather the required data that was employed as input by the researcher to witness the situation and reach a conclusion. Target population for this study was limited with employees who are working in permanent and contract bases inAddis Ababa ongoing construction sites and head office of the company and depend on the research title the investigator was excluded daily laborers from this study assuming that they may have no full information about Occupational Safety and health management systems of the understudy organization.This study focused to assess the effectiveness of OSHMS only and used descriptive statistics.

1.9 Organization of the Research Report

This research paper divided in to five chapters. Chapter two deals with extensive literature review related to Occupational safety and health management systems. Chapter three encompasses the methodology of the study part in which the participants of the study, the source of the data, the data collection instruments, the procedures of data collection and the methods of data analysis described. Chapter four, deals with data analysis and finally, Chapter five deals with the summary and conclusion and recommendation.

CHAPTER TWO

LITRATURE REVIEW

2.1 Definition of Occupational Safety and Health Management System

According to Robson et al., (2005) identified Occupational Health and safety management system defined as:

> *"An OHSMS is the integrated set of organizational elements involved in the continuous cycle of planning, implementation, evaluation, and continual improvement, directed toward the reduction of occupational hazards in the workplace. Such elements include, but are not limited to, organizations' OHS relevant policies, goals and objectives, decision-making structures and practices, technical resources, accountability structures and practices, communication practices, hazard identification practices, training practices, hazard controls, quality assurance practices, evaluation practices, and organizational learning practices."*

Occupational Health and Safety Management Systems (OHSMS) have been defined by Gallagher as "…a combination of the planning and review, the management organizational arrangements, the consultative arrangements, and the specific program elements that work together in an integrated way to improve health and safety performance" (Gallagher, 2000).

Randall (1995) stated that Occupational safety and health management is the physiologically/physical (occupational disease and accidents) and psychological (organizational stress and low quality of working life) condition of an organization's work force that result from the work environment provided by the organization i.e.everyone is affected by safety and health conditions. OSH is an interdisciplinary area that involves protecting the health, safety and welfare of people in the workplace (Kalejaiye, 2013) and others that may be affected directly or indirectly by the activities at the workplace

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(Aoife et. al., 2013; ILO, 2009). This domain is necessarily vast, encompassing a large number of disciplines and numerous workplace and environmental hazards Ibid (2013, 2009). A wide range of structures, skills,

knowledge and analytical capacities are needed to coordinate and implement all of the "building blocks" that make up national OSH systems so that protection is extended to both workers and the environment" (Alli, 2008). Armstrong (2011) stated that it is a diverse science applied by occupational health professionals, environmental health practitioners, chemists, doctors, nurses, safety professionals and others who have an interest in the protection of the health of workers in the work place.

2.2 Benefits ofOccupational Safety and Health Management Systems

ILO (2009) pointed out, the promotion of decent, safe and healthy working conditions and environment has been a constant objective of International Labour Organization (ILO) action since the Organization was founded in 1919 and significant body of international instruments and guidance documents has been developed by the ILO over the past 90 years to assist constituents in strengthening their capacities to prevent and manage workplace hazards and risk.

An effective implementation of the Occupational Safety and Health Managementsystem(OSHMS) could reduce accidents thus decreasing compensation paid. Studies (Jaselskis&Suazo, 1993; Teo&Phang, 2005) have found that safety measures taken in the workplace can lead to better safety performance and Laukkanen (1999) also emphasized on safety as being part of a skillful job performance. Organizations may perhaps benefit from the concept of OSHMS if they take into account a number of important principles when deciding to apply a systems' approach to the management of their OSH program and management must ensure that the system is designed to improve and stays focused on the performance of preventive and protective measures rather than on itself; It must also ensure that audits contribute to the continual improvement process rather than becoming a mechanism for Improving audit scores only (WHO, 2003).

OSH management system provides companies with the framework to develop a solution to the increasing challenges facing them at the workplace today, from high injury and illness, lost work days, increasing occupational health and safety regulations, large citations/penalties, rising worker's compensation costs, costly medical claims, worker retention and employee satisfaction (David, 2003).

According to ILO (2008) specified that Occupational health and safety provides the following packages of benefits: Increased productivity and profits due to the less time that results from workers injury; Relatively lower costs investing in training programs and safe systems of work is far cheaper than cost associated with a work place injury; the safe and comfortable work environment can lead to a lesser rate of employee turnover and this in turn might result in retention of skilled staff; positive publicity for one's business and higher reputation; provides a company that spends enough on its occupational health and safety with tax; promote and maintain the highest degree of physical, mental social well-being of employees in all occupations; prevent diseases among worker caused by their working conditions; protect employees from risk factors which could affect their health; places and maintains workers in an occupational environment adapted to their physiological status.

Charles, (2003) has listed six good reasons why organization has to prevent accidents, injuries, illness and deaths.

- Destruction of human life is morally unjustified
- Failure of employers or workers to take precautions against occupational injuries and illness makes them morally responsible for accidents
- Occupational incidents limit efficiency and productivity
- Occupational accidents and illness for reaching social harm
- Safety techniques have produced reduction of accident rate and severity rate

Recent cries and mandate have come for that state and federal levels to provide a safety and healthy work place. An OHS reference guide prepared by the National Occupational safety Commission of the Australian government (2001) underscores the importance of a management system to managing health and safety at workplace as follow: *"To ensure that important occupational health and safety issues are not overlooked employers need to adopt a systematic approach to managing health and safety."*

Clare et al., (2001) highlighted Occupational Health and Safety Management can deliver more healthy and safe workplaces under the right circumstances. The research of Gallagher (2000) provides evidence of superior OHS performance in firms with a dominant 'safe place' control strategy and 'innovative management' structure and style. The research and

consultations strongly indicate that such effectiveness is conditional upon a range of factors, including the kind of system used, senior management commitment, integration into general management systems and effective employee participation (Clare et al., 2001).

As Ganapathi(2013) Stated out safety is an important issue, but many employers do not feel it is essential to the success of companies (Aoife and Alistair 2013). According to Radhlinah(2000),the construction industry can benefit from an improved attitude change that cultivates a vision for the future which increase safety concerns and effectively integrates them into the overall management mix.

2.3 Historical Concept of Occupational Safety and Health Management system

The concept of an occupational health and safety management system (OHSMS) has become common over the past 20 years; a variety of OHSMS-based standards, guidelines, and audits have been developed (HSE, 2006, ILO, 2001

One of the earlyinfluences on the development of professionals was the growth of industrial welfare workers at the beginning of the twentieth century(Tayor, 2008).

From the turn of the twentieth century through the late 1960s remarkable progress was made in reducing the rate and severity of job related accidents and disease; yet the most significant piece of legislation in the area of employee health and safety was not enacted until 1970, this law is called the occupational safety and health act (Decenzo& Robbins, 2005).

As Armstrong (2009) stated that during the 1990s health and safety at work increasingly become subject to European Union directives and regulations, the result being greater complexity and more extensive obligations for employers. Ibid(2009)added that except in workplaces with particularly high safety risks where a specialized function has been established, the human resource department has taken on the role of advising managers on the organization's legal obligations. More recently state stepped in by requiring employers to take reasonable steps to protect the health and safety of employees and by providing an inspectorate charged with helping to ensure that they do so in practice since the achievement of the highest standards of health and safety in the workplace is the moral as well as the legal responsibility of employers (Bernard, 2003).

The development of health, safety and welfare provision is to a large extent interrelated with the development of human resource management itself (Abdi, 2013). One of the early influences on the development of the profession was the growth of industrial welfare workers at the beginning of the twentieth century enlightened employers gradually began to improve working conditions for employees and the industrial welfare worker was often concerned in implementing these changes. It was found that such programs were beneficial for both the mental health of the employees and their work (Torrington & Taylor 2008).

The construction industry has a high occupational accident rate and the use of multiple contractors and subcontractors on construction sites is the rule; a strong incentive for using OSHM in this sector is that it provides a common template for all the parties working on a site to harmonize the planning, implementation and monitoring of OSH requirements, as well as building a basis for performance auditing (ILO 2011). It is also facilitates the integration of OSH needs in the early stages of the complex design and planning, bidding and start up stages of a construction project. Thus the implementation of integrated management systems in construction is recognized as an effective tool to ensure a coherent integration of quality, environmental and OSH systems on a worksite with multiple stakeholders (Amal, 2012).

According to Armstrong (2009) a system approach to managing health and safety is not only a matter of convenience but also a legally mandatory issue to be sought by organizations. Noel & Associates-risk management consultants (2010:6) emphasis this fact when saying "As community attitudes to occupational health and safety have changed and associated regulations evolved, organizations have come to understand that a systematic approach to managing safety is required." *Still* other writers Jain and Rao, (2007) wrote about this system and recognized it as "something that boosts an organization's performance by enabling the firm to control its occupational health and safety risks."

The OSHMS' approach gained support following the wide endorsement and success of the ISO standards for quality (ILO9000 series) and later for the environment (ISO14000 series). This model is based on systems theories developed primarily in the natural and social sciences, but is also similar to business management mechanisms. Four elements common to general systems theories are: input, process, output, and feedback.

According to Takala (2002), identified Health and Safety management contains: national policy; a structure and organization(structures of employers and workers and other partners and to implement such a policy this must include setting of clear responsibilities, accountabilities and allocation of resources; an implementation plan that has objectives, time limits and targets that can be measured by agreed indicators; implementation including the traditional measures listed above; feed-back, review, auditing and adjustment of the policies, structures and implementations.

In general, Occupational Safety and health management is meant to protect employees and other people affected by what a company does against the hazards arising from their employment or their links with the company (Armstrong 2010).

2.4 Occupational Safety and Health Management Systems

According to ILO-OSH (2011) Occupational Safety and Health Management System (OSHMS) is a framework that provided direction for compliance with the Occupational Safety and Health requirements pursuant to national law and regulation.

Occupational safety and health, including compliance with the OSH requirements pursuant to national laws and regulations, are the responsibility and duty of the employer and should show strong leadership and commitment to OSH activities in the organization, and make appropriate arrangements for the establishment of an OSH management system. The system should contain the main elements of policy, organizing, planning and implementation, evaluation and action for improvement (ILO, 2001).

2.5 The continual improvement cycle of OSHMS

As ILO (2001) stated OSHMS is composed of various individual elements that make up the whole system. The ILO guideline to Occupational Safety & Health Management system a tool for continual improvement cycleoutlines havefive components that need to be built in to the OSHMS of every organization.

a) Policy

Requirements of the safety and health policy reflect the management commitment towards the organization's safety and health and worker participation in OSH (Amal, 2012).Designing safety and health policies and rules and discipline violators, are important

components of occupational safety and health management efforts. Thus, from a human resource perspective, a priority is the development of workforce safety policies and procedures (Wagen, 2007).

According to Armstrong (2009) The Safety policy statement should consist of the general policy statement (declaration of the intention of the employer to safeguard the health and safety of employees); The description of the organization for health and safety (policy statement should describe the health and safety organization of the business through which high standards are set and achieved by people at all levels in the organization and details of arrangements for implementing the policy (this part indicates how key management personnel are held accountable for performance in their areas).

Armstrong (2009) indicated that Management's acceptance of its responsibilities for safety and health policy can best be expressed by setting a policy provides a safe & healthful workplace for its employees.

Furthermore, ILO (2001) guideline pointed out regarding to OSHMS policy, the employer, in consultation with workers and their representatives should set out in writing an OSH policy, which should be included:

- specific to the organization and appropriate to its size and the nature of its activities;
- concise, clearly written, dated and made effective by the signature or endorsement of the employer or the most senior accountable person in the organization;
- communicated and readily accessible to all persons at their place of work;
- reviewed for continuing suitability; and
- made available to relevant external interested parties, as appropriate

The organization safety policy should be outline the organizations aims and objectives for its safety program and should designate the authority & responsibilities for achieving them and safety responsibilities shall be included in the supervisor job description and in the performance evaluation (Thomas, 1989).

Davies and Tomasin (1999) suggest that the company policy statements issued by employers should be clearly understood by their employees; policy statements should indicate how the company is organized with respect to the health and safety responsibilities of the

management, and should further state the managers' commitment to providing safety information, training and advice to employees.

b) Organizing

According to ILO (2001), Organizing is the process of allocating the responsibilities and the necessary arrangements to be taken. HSE (1991) describe the four C's of organizing as control, cooperation, communication and competence. Organizing also outlines the needs for proper OHS documentation and ILO(2011) added elements which are management and employee responsibility and accountability competencies' and training of employees; OSH documentation and communication in all levels regarding to Occupational safety and health management systems.

c) Planning and implementation

The organization should formulate a plan to fulfill its safety and health policy; the purpose planning, according to International labor organization (ILO-OSH, 2001), should be to create an OSH management systems that supports:

As the minimum, compliance with national laws and regulations

The elements of the organization's OSH management system; and

Continual improvement in OSH performance

Most on-the-job troubles and accidents are a direct result of insufficient planning when preparing the Ibid(MHR, 2014). After work has begun, correcting mistakes in construction slows down the operation, adds to the cost, and increases construction business failure, so contractor must build safety into the pre-bid planning in the same way that all of the other pre-bid factors are considered

Another common framework for developing an OHS management system is the Australian/New Zealand joint standard AS/NZS 4801:2001-OHS Management System Specification. This joint standard describes the basic components that should be built in to an OHS Management System. According to this standard the basic elements should make up the entire OSH management system are: OHS policy and commitment, planning &implementation, Measurement & evaluation, and Management review. Still Armstrong (2010) added another constituent element, condition of risk assessment that must be built in to the OSHMS of an organization. Canadian Center for Occupational Health & Safety (2009)

also pointed out one more element incident recording or record keeping of major incidents that take place at the work place.

The ILO guideline (2001) in turn states the following regarding OSH planning and implementation.

- Identify the current applicable national laws and regulations, national guidelines, tailored guidelines, voluntary programs and other requirements to which the organization subscribes
- Identify, anticipate, and assess hazards and risks to safety and health rising from the existing or proposed work environment and work organization
- Determine whether planned or existing controls are adequate to eliminate hazards or control risks; and
- Analyze the data provided from worker's health surveillance

d) Evaluation

Arrangement should be established and maintained for preventive and corrective action resulting from OSH management system performance monitoring and measurement, OSH management system audits and management reviews (Berhane, 2014).

2.6 Safety, Health and Safety and Health Management Effectiveness

2.6.1 Safety

Safety is defined as freedom from unacceptable risk, thus, safety is achieved in the workplace if the workers are free from unacceptable risk (Manuele, 2008), According to Dictionary of Human Resource and personnel management, (2003) safety is the fact of being free from danger or risk or to take safety precautions or safety measures to make sure something is safe. It also denotes continues and healthful living without injury and freedom from harm or the danger of harm.

2.6.2 Safety management

As Dessler (2006) pointedout, Safety management is an art and science of setting safety objectives of the industrial company and related activities of planning, organizing, directing, executing, supervision, monitoring administration, improving various functions to achieve safety objectives; to providing a safe working environment is important for several reasons, one of which is the staggering number of work related accidents. Accident occurs for three main reasons; chance occurrences, unsafe working condition and unsafe act by employees.

Safety management aims at creating organizations to achieve total safety (freedom from accidents) and provide good working conations for better health, higher efficiency, higher productivity, morale or workers and better working conditions. According Gilley, Dixon, Quatro and Gilley(2009) workplace safety programs have a common goal that is to promote and reward safe practices in the workplace, and to reduce work-related illnesses, injuries, and fatalities. Safety programs establish safe work practices, procedures, and guidelines, mandate training, and assess job hazards and risks.

As, Garrey (2009) stated that in recent one year there are 5,559 U.S workers died in work place accidents; 4.4 million occupational injuries and illnesses resulting from accidents at work. Above all these accidents reflect the human suffering incurred by the injured workers and their families or the real economic cost incurred by the employers.

The construction industry tends to have a low awareness of the long-term benefits of safety practices, while the tendering process often gives little attention to safety, resulting in cost and corner cutting (Biggs et al, 2005). Sometimes, safety is found to be the first item to face cost cutting because some of the employers often believe that the implementation of OSH management system will cost more (Ahmadon et al., 2006).

2.6.3 Health

According to Dictionary of Human resource and personnel management (2003) Health is defined as being fit and well, not ill; employee health problems are varied and somewhat inevitable. They can range from minor illnesses such as colds to serious illnesses related to the jobs performed; some employees have emotional health problems; others has alcohol or

drug problems. Some problems are chronic; others are transitory. But all may affect organizational operations and individual employee productivity.

2.6.4 Occupational Health Management

Torrington, Hall & Taylor, (2008) specified that the main focus of occupational health management is to promote health hazardous free working environment; Positive health programs display a variety of different approaches aimed at relieving and preventing occupational illness and associated problems, and promoting health lifestyles Employers who are concerned about maintaining a health workforce must move beyond simply providing health working conditions and begin to address employee health and wellness in other ways.

The main problem with reducing the occurrence of occupational disease is that; the difficulty of detecting them and pinpoint their cause (Fisher, Cynthia, Schonfelds and Shaw, 2006)

In Brazil, the risk of a construction worker suffering a fatal accident decreased from 32.7 deaths per 100,000 workers in 2000 to 18.6 in 2009. The majority of these deaths were due to falls. Despite the reduction, the level of risk is still high when compared to those in the United States, England, and Finland, countries that have adopted safe practices and are references for safety to the world. (African newsletter, 2013)..

In present context it is not only sufficient to take care of safety but also the wellbeing of employees. Health and safety are two inseparable concepts and affect each other. For instance, if health of employees in not given due regards it may lead to accidents (Sunil and Khanna, 2009), in the next section Occupational safety and health management effectiveness are discussed.

2.7 Factors Contribute to Effective OSHMS

Effective safety and health management system is about knowing how to identify and control hazards and applying key managerial principles so that employees work safely everyday they are on the job(HSE, 2013).

The performance of an OSHMS can only be as good as the performance of the overall management of the organization (Robson, 2007). Like all methods, it has both strengths and weaknesses which should be known;it is therefore important to be aware of the pitfalls that may derail the operation of an OSHMS, but also know what elements must be in place to ensure a good performance and benefit from the important advantages of OSHMS for safety and health(Biggs, 2005). It must be kept in mind that these strengths and weaknesses apply mostly to medium and large organizations which have the necessary technical and financial resources for a full implementation of OSHMS (ILO 2011)**.**

According to Roshana (2008) indicated that factors contributing to effective OSHMs are indicated as follows: Management system implemented with the intention of improving OSH; management system customized to organizational needs; investing in OSH is seen as an investment in the future of the company; OSH objectives are contributing to the strategic development of the organization; strong senior management commitment; development with support and involvement of all internal and external stakeholders of the organization; focus on working environment work organization and social innovation; OSH is integral to management performance appraisals; management living up to its message OSH is incorporated in all jobs, tasks and process; all employees encouraged, trained and involved in OSH use of tacit knowledge of the workers; and stable organization with stable workforce, larger organization familiar with management system and with adequate resources; Audit appropriately used to verify and validate OSHMS and facilitate continual improvement and provision of adequate resources.

Moreover, different literatures addedmore factors specifically pertaining to OSH are also related to better OSH performance across enterprises; such factors include: the delegation of safety activities; an active role of top management in OSH; the inclusion of workers in decision-making; the presence of Joint Health and Safety Committees (JHSCs); the safety training of workers; the evaluation of occupational safety hazards and the use of internal safety audits (Shannon et al., 1996; Shannon et al., 1997; Mearns et al., 2003; Zohar, 2002; O'Dea and Flin, 2001; Havlovic and Mshane, 2000). It should be stressed that many cultural, managerial, and operational factors contributing to better OSH performance are affected by

the size of the enterprise. In a recent empirical study,(Micheli and Cagno, (2010) identified several OSH factors as dependent on the size of the enterprise.

As Clare et al., (2001)and Armstrong, (2009), recommended the following practices as important factors of occupational safety and health management effectiveness:

- Organizational commitment and responsibility
- Employee involvement and motivation in safety and health management programs
- Inspection, accident investigation, and evaluation of safety and health efforts

According to Clare et al.,(2001) the research and consultations strongly indicate that such success is conditional upon a range of factors, including the kind of system used, senior management commitment, integration into general management systems and effective employee participation. Robson et al., (2005) also pointed outfacilitators of and barriers to OHSMS implementation and effectiveness would fall into three categories: those internal to the OHSMS (management commitment to OHS, performance indicators, worker participation); those external to the OHSMS but in the workplace (e.g., company size, presence of other management systems, industrial relations, unionization); and those external to the workplace (e.g., trade pressures).

Based on(Christian et al., 2012&Gallagher et al. 2001)the main factorthat contribute on Occupational safety and health management effectiveness are:

Internal organization factors: Strong Senior management involvement; OSHM introduced to improvement OSH; Provision of adequate resources; OSH integral to management performance appraisals & Leading by example;

Integration intomanagement systems: All organizational functions incorporate OSH; Employee involvement: All employees encouraged and capable of participation and Independent representation of employees encouraged and supported; Workforce characteristic: Stable workforce; Nature of organization: Large/small and stable workforce;

Contractor relation: Principal contractor works with subcontractor to develop a compatible OSHMS;

Audits and audit tools: Appropriately used audits can verify and validate an OSHMS and facilitate continuous improvement; adequate audit tools are tailored to organizational needs

and reflect key OSHMS success factors; Audit processes are robust and auditors aretechnically competent and audits are integrated within a comprehensive approachto measurement

2.7.1 Management Commitment towards OSHMS effectiveness

According to Charles (2003) the term commitment is really directed at management since it is solely management's responsibility to provide a safe and health work place for its employees, when occupational injuries and illness occur they are considered as failings with the management system while department Managers and supervisors have a leading role in the implementation of Occupational Safety and Health Management Effectiveness.

Management commitment is defined as the management's involvement and engagement in actions towards achieving OSHMS goal (Cooper, 2006). Gilkeyet. al. (2003) found that management support is important in the implementation of OSHMS. Ashill, Carruthers and Krisjanous (2006) found that management commitment is manifested through various ways such as having safety education and training, giving rewards, and empowerment of employees to make decision and investment in safety education and training will allow employees to gain the necessary safety knowledge and help them to work safely. Furthermore, giving rewards to employees that report unsafe behaviors of co-workers during working is also an important aspect of OSH successful implementation.

Lin and Mills, (2001) stated that Management Commitment plays a major role in OHS performance; safety management is an organizational commitment to a compressive safety effort; this effort should be coordinated from the top level of management to include all members of the organization.

Both Nishgaki (1994) and Hinze (1988) found that regular involvement by the company management improved the safety standards. Vredenburgh (2001) stated that the roles of managers/supervisors manifest itself through: Provision of Safety and Health job training programs; Management participation in safety committees; Consideration of safety in job design and Provision of necessary safety; health equipment; review of the pace of work;

Development safety and health policies and rules and Inspection and Evaluation of Safety and Health efforts.

As Ali, (2008) pointed out all levels of management must be involved in the activities required for planning, organizing, and controlling job-related health and safety activities. Management's interest must be audible, visible, and continuous.

The wearing of protective clothing and the use of safety equipment is crucial in reducing the effects of accidents on construction sites. However, both (Harper, 1998 & Holmes, 1999) suggested that management commitment is required to enforce the wearing of safety equipment. It is often the case that safety equipment is provided, but employees are reluctant, orneglect, to wear it.

Apart from,Gallagher et al., (2001), in their comprehensive study also underscore several factors hindering the implementation of effective OSHMSs; barriers to effective OSHMSs relate to the type of system chosen by enterprises, internal organizational factors (such as management commitment, the integration of OSHMSs into management systems, worker involvement), workforce characteristics, the nature of the organization, contractor relations, and audit processes and tools.

2.7.2 Employee Involvement

Employee participation(employee involvement) has a principal to an effective safety management and a behavioral-oriented technique that involves individuals or groups in the upward communication flow and decision-making process within the organization. Empowering workers provides them with authority, responsibility, and accountability for required decisions and ensures that both employees and management are involved in setting goals and objectives (Vredenburgh, 2001).

One way to encourage employee safety is to involve all employees at various times in safety and health training sessions and committee meetings and to have these meetings frequently. Most training programs generally focuses on hazardous at work, safety rules and regulations, safe and unsafe work behavior. Training programs are typical in industries with serious accident problems. Safety training is important not only for employees but also for

supervisors since workplace health and safety efforts cannot succeed without support and effort of supervisors (Bernard, 2003).

Workers frequently are involved in safety planning through safety committees, often composed of workers from a variety of levels and departments; Employers can either consult with the workforce directly or set up a health and safety committee to which employee representatives are elected (Torrington et al. 2008).

According to Armstrong (2006) Safety committees consists of health and safety representatives and advises on health and safety policies and procedures, help in conducting risk assessments and safety audits, and make suggestions on improving health and safety performance.

The ILO guideline (2001) outlines the following criteria on workers participation:

- Workers participation is an essential element of the OSH management system in the organization
- The employer should ensure that workers and their safety and health representatives are consulted, informed and trained on all aspects of OSH, including emergency arrangements, associated with their work
- The employer should make arrangements for workers and their safety and health representatives to have the time and resources to participate actively in the process of organizing, planning and implementation, valuation and action for improvement of the OSH management system
- The employer should ensure, as appropriate, the establishment and efficient functioning of a safety and health committee and the recognition of workers safety and health representatives, in accordance with national laws and practices.

Employee involvement in improving program is crucial. As with many quality of working life programs, employee involvement in improving safety and health is not only a good idea, but also one likely to be desired by employees (Randall, 1995).

2.7.3 Employee Training

Regardless of the degree of safety built into a job, unsafe actions on the part of employees will always be a cause of injuries; teaching employees safe work habits means showing them how to do their tasks with less risk to themselves and less damage to equipment (Ganapathi et al., 2013). OSH related training for the implementation of the OSHMS program should be carried out on a continuous basis at all levels, from top managers to shop floor workers, and updated regularly ensuring knowledge of the system and keeping up with changes in the organization(Armstrong , 2011).

According to Adel (2012) stated that training is one of the best methods that can be sued to influence human behavior for the purpose of developing sound and safe work habits; Employee training shall be in the first day of employment and should continue periodically for the length of the worker's affiliation with the company. Benjamin (2008) found that a safety training program needed for newly hired employees, employees reassigned to other jobs; employees returning to work after an extended lay-off period or medical leave; when new equipment and processes are introduced or installed in and procedures.

The ILO guide line (2001) also has a provision for employee safety and health training underlined as: It should cover all members of the organization as appropriate; it should provide effective and timely initial and refresher training at appropriate intervals; it should include participants evaluation of their comprehension and retention of the training; it should be reviewed periodically and It needs to be documented as appropriate and according to the size and nature of the organization's activity.

2.7.4 Safe work practice and procedure

Labour proclamation 377/2003 Article 92:7 clearly stated that the responsibility of employers take the necessary measure to safeguard adequately the health and safety of the workers; take appropriate pre-executions to insure that all the processes of work shall not be a source or cause of physical, chemical, biological, ergonomical and psychological hazards to the health and safety of the workers.

According to workplace health, safety and compensation (2005), young workers are at a higher risk for workplace accidents; they require additional training regarding safe work

practices and procedures because many of them have not yet gained the knowledge required to recognized hazards others may be overly confident and willing to take short cut or use risky behavior. Workers who actually do the job must be involved in the development of safe work practices and procedures.

2.7.5 Inspection and Audit

According to Thomas (1989) depending on the company's safety organization and interest of the safety manager, various methods of carrying out inspections have been devised. He mentioned the most used methods as information inspection; general planned inspection and Critical parts inspection.

It is not necessary to wait for an external inspector to inspect the work area for safety hazards; inspections may be done by a safety committee or a committee composed of management and employee Armstrong (2010). They should be done on a regular basis in order to inspect all premises for possible safety and health problems. When accidents occur, they should be investigated by the employer's safety committee or safety coordinator in the scene of an accident, it is important to determine the physical and environmental conditions that contributed to the accident like,poor lighting, poor ventilation, and wet floors are some possible contributors (Dessler, 2006).

As described by Armstrong (2011) Health and safety audits provide for a much more comprehensive review and evaluation of all aspect of health and safety policies, procedures practices and efforts.

According to Saundets(1992) cited by Mengesha(2013) stated that a safety audit will examine the whole organization in order to test whether it is meeting its safety goals and objectives. It will examine hierarchies, safety planning processes, decision making delegation, policies making and implementation.

Armstrong (2011) stated that safety audit will examine the whole organization in order to test whether it is meeting its safety aims and objectives. It will examine hierarchies, safety planning processes, decision making, delegation, policy making and implementation as well as all areas of safety program planning.

2.7.6 Employee Safety and Health Records

HSE (2007) believe that one of the most important parts of an accident management is record keeping; it is one of the primary means any company has for measuring the effectiveness of its accident prevention program. There are essentially two different kinds of accident records: 1) injury records, of which the OSH act requirement is on a part; 2) accident investigation records and, all companies should keep both types.

According to ILO(2001) guidelines OSH records should be includes: records arising from the implementation of the OSH management system; records of work-related injuries, ill health, diseases and incidents; records arising from national laws or regulations dealing with OSH; records of workers' exposures, surveillance of the working environment and worker's health; and the results of both active and reactive monitoring.

2.7.7 Performance monitoring and measurement

Procedure to monitor, measure and record OSH performance on a regular basis should be developed, established and periodically reviewed, responsibility, accountability and authority for monitoring at different levels in the management structure should allocated(Berhane, 2014).

Risk assessment is not completed when action has been initiated. It is essential to monitor the hazard and evaluate the effectiveness of the action in eliminating it or at list reducing it to an acceptable level (Hendriet at. 2002) cited by Mengesha (2013).

2.7.8 Building an Effective Health and Safety Management System

A health and safety management system involves the introduction of processes designed to decrease the incidence of injury and illness in the employer's operation, Alberta (2006). The successful implementation of this system requires management commitment to the system, effective allocation of resources, and a high level of employee participation. For the system to be effective, management must show leadership and commitment to the program. To achieve this, management should put the organization's expectation around health and safety into writing by developing a health and safety policy (Dessler, 1997). Employees who forms part of health and safety committee, should be involved in writing the policy to be signed by senior operating officer indicating and confirming the commitment of management. Clearly defined and well communicated health and safety roles and responsibilities for all levels of

the organizations will create an expectation of a standard level of performance and accountability among employees, contractors, and visitors. All levels must be aware of their individual roles and responsibilities under both state law and company standards. For a health and safety management system to be effective, management at all levels, should demonstrate their support for the health and safety program. This may be demonstrated through management, participation in health and safety leadership training meetings, facility inspections incident investigations among others (Dessler,1997).It is important for workers to be involved in the development of the system in order to create ownership as well as help a better fit with the culture of the organization. Employers are required to assess a work site for existing and potential hazards before work begins. Hazard assessment data could be used to determine what worker training needs to be done, and to build the content of employee orientations and job training hazard assessment data could be used as the basis for inspection checklists. In the case of incident investigation, hazard assessment and control data can be used to help determine if a system failure was the cause of an incident (ibid).

2.7.9 Legal enforcement towards OSHM effectiveness

Anderson (2007) believes that as the main objective of OSH legislation is to prevent accidents and ill health in the workplace, there should be effectiveness and accountability in the enforcement of OSH rules and regulations. Enforcement of regulations is very vital in ensuring the effectiveness of regulations (Nnedinma et al., 2014). Thus, researchers (Anderson 2007; Idubor & Osiamoje 2013) emphasized regulations without proper enforcement isequal to no laws. In that Idubor & Osiamoje (2013) postulate that lack of strict enforcement of OSH regulations enables non- compliance to OSH regulations. As Nnedinma et al. (2014) mentioned, reviewed so far reveals that OSH regulations enforcement approaches are identified as reactive approach and the proactive and collective participatory approach.

Reactive approach: Reactive approach of enforcement involves inspection of workplaces to detect flaws and make recommendations for improving the state of OSH (Makhonge, 2005) in that employers or industry owners in most developing countries.

Proactive and collective participatory approach: Makhonge (2005) demonstrates that this approach of enforcement is more adequate than the reactive approach; it seeks to ensure

compliance before the violation of the regulations by introduction of safety advisers in organizations; introduction of competent and effective safety and health committee in organizations; encouraging self-regulatory approach; mandatory formulation of safety polices and appointing competent safety persons who are responsible for safety issues in the organizations. Also, it seeks to prevent organizations from defaulting by active participation of all in the organizations and engages support from the regulatory authority; thereby, protecting the health, safety and welfare of the workers. Nnedinma et al. (2014) suggests that this approach is preventive and collectively participatory in nature; it is similar to what obtains in developed countries and some developing countries; better still, most of its features obtain.

Ethiopian labor proclamation (377/2003, Article 92) clearly spells out the fundamental obligations of an employer with regard to putting in place of all the necessary measures in order to ensure, work places are safe, healthy and free of any danger to the well-being of workers and take appropriate pre-executions to ensure that all processes of work shall not be a source or cause of physical, chemical, biological, ergonomically and psychological hazards to the health and safety of the workers. Whereas Labor proclamation (377/2003, article 93) mentioned, the law provides the obligations of workers pertaining to the required co-operation and putting in to practice of the regulation and instruction given by the employer in order to ensure safety health and working conditions at work places.

Organizations and Occupational Safety and Health Act Various unions, employers and employees, as well as governments especially in American and European continents have made substantial efforts to accomplish effective and efficient task performance toward promoting occupational safety and health in organizations. The wide spread concern about employee safety and health in United States led to the passage in 1970 of the most comprehensive law regarding worker safety. This act is known as the Occupational Safety and Health Act of 1970 but is frequently referred to simply by its initials: OSHA. At the time OSHA was passed, approximately 15,000 work-related deaths occurred in the United States every year Denisi & Griffin (2005).

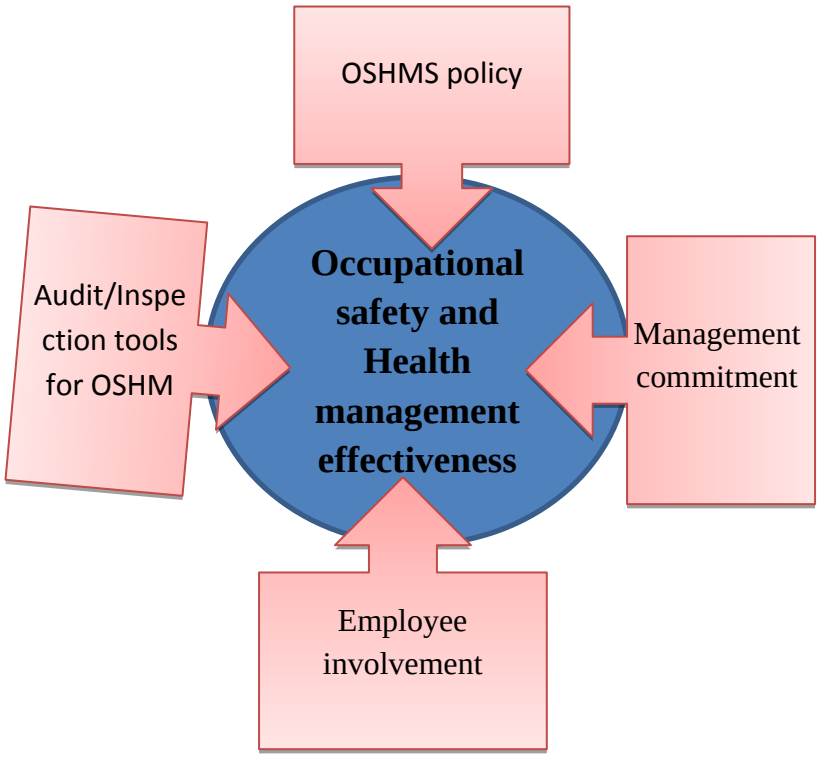
2.7.10 Health Hazards in Construction

Construction workers are exposed to a variety of health hazards every day. These men and women have the potential for becoming sick, ill and disabled for life. Learn the health hazards on your job and know how to protect yourself… Sadly, these health hazards (e.g., dangerous dust, fall from height, material falling and other chemicals) can be unexpectedly brought home. So Construction Company should be given attention to implementation OSHMS policy with high management commitment and employee involvement to reduce workplace hazard in construction effectively.

2.8 Conceptual framework of the study

As different literatures discussed briefly in this literature review above, Management commitment and involvement should be the first point to consider when an organization thinks of implementing occupational safety and health management systems (Christian et al., 2012; ILO, 2011; Armstrong 2009; Cooper 2006; Robson et al., 2005; Charles 2003; Vredenburgh, 2001;clare et al., 2001;Gallagher et al. 200; ILO, 2001) safety policies and procedures should be vital for implementing OSH management(Int.J.Curr.Res. Rev, 2014; Armstrong, 2009; Roshana, 2008; Wagen, 2007; Takala, 2002;).Through formulation of safety committee, providing of training and communicating safety issues workers can be involved and participates in the overall work place safety and health management program is also one of the facilitator of OSHMS effectiveness (Clare et al., 2001; Gallagher et al. 2001; Christian et al., 2012). Furthermore it is important to inspect and investigate for potential safety and health hazardous (Torrington et al., 2008; Armstrong 2006; Bernard, 2003 and Vredenburgh, 2001). Finally each and every organization should have to monitor its safety and health efforts regularly (Vredenburgh, 2001 and Bernard, 2003).

Figure1: Conceptual Framework of the researcher (source: researcher's own model)



As we show on figure-1 above the independent variables are the main factors or facilitators for the overall effectiveness of Occupational Safety and Health Management System in Zamra Construction Company. Hence, the positive outcome of OSHMS effectiveness is depending on the positive outcome of independent variables.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY OF THE STUDY

3.1 Research design

An appropriate study design is one that allows valid inferences to be made from the findings and these inferences have direct bearing on the research question that the study attempts to answer (Chan, 2008). C.R. Kothari (2004) identified that to describe the characteristics of a particular Phenomenon, descriptive research is preferable. It is concerned with specific predictions, with narration of facts and characteristics concerning individual, group or situation. According to (Best 1970), cited in Louis Cohen et al. (2007) descriptive research is concerned with: conditions or relationships that exist, practices that prevail, beliefs, points of views, or attitudes that are held, processes that are going on, effects that are being felt, or trends that are developing. As (Geoffrey et al., 2005) added that by gathering data on a large group of people, descriptive research enable the researcher to describe the average member, or the average performance of a member, of the particular group being studied. Therefore, this study employed a descriptive research design to describe the current assessment on the effectiveness of Occupational Safety and Health management systems at Zamra Construction Company, descriptive research design were used.

Based on the objectives and the nature of research questions of the study, quantitative data collection and analytic techniques were employed which was substantially supplemented by qualitative data in order to make the result sounder.

3.2 Sample and sampling technique

3.2.1 The study area

This study was conducted at Zamra Construction Company at Head Office and ongoing construction sites in Addis Ababa the capital city of Ethiopian contract and permanent based employees.

3.2.2The study population

According to Zamra Construction Human Resource department information, entire the company, there are 9056 workers. Among these, 120employees are working at in the Head Office and in Addis Ababa construction sites as permanent and contract bases. Thus, the

populations of this study were120building construction workers (office engineers, masons, plasterers, welders, painters, carpenters, machine operators, site supervisors, nurses, safety officer, site managers, and Zamra construction policy makers). The researcher excluded daily laborers due to the researcher assumed that they have no full information about the understudy company's Occupational Safety and health management systems.

3.2.3 Sampling technique

Due to irregular distribution on job positions, this study applied simple random sampling the aim of provided equal probability of being selected in order to achieve the desired representation from sampling frame.

3.2.4 Sample Size

There are120 contract and permanent building construction workers in Addis Ababa, 92 samples were taken from sampling frame. Sample were determined using Slovin's formula Statistics Canada (2010) i.e. $n= N/1+Ne^2$),

n= number of samples

N= total population

e= margin of error (confidence level of 95%)

$n = N/(1+Ne^2)$

$=120/(1+120*0.05^2)$

=92.3076

n= 92 samples

This shows that about 77% of the target population has been included in the sample.

The other three respondents were taken from managerial level and Safety officer using convenient sampling methods for interview because the researcher assumed that they are key informant to get detail information about OSHMS practice in Zamra Construction Company.

3.3 Source and Tools/Instruments of Data Collection:

In order to obtain adequate information which was obtained from different sources the study was used both primary and secondary data. This study also followed the guideline which is provided by School of Commerce Research Methods (MGT501), writing a research proposal: A guide to master students.

3.3.1 Primary data:

A questionnaire survey is one of the most cost effective ways to involve a large number of people in the process in order to achieve better results, as recommended by McQueen and Knussen (2002) and Andi and Minato (2003).Hence for this study, questionnaire was the dominant primary data collection tool for gathering detailed information from large number of employees with in short time. For this purpose pretested structured self- administered types of questionnaires adopted from Nordic Occupational Safety Climate Questionnaires (Kinese et al., 2012), retrieved from www.midss.ie measurement instrument database for social science and also used by Mengesha Asmamaw(2013). The questionnaire was distributed to randomly select building construction workers and semi-structured interview was another primary data collection tool the researcher was used to collect data from the managers using convenient sampling methods. Also the researcher's personal observation of the construction site was considered as a primary data source of this study.

3.3.2 Secondary data

Both published and unpublished sources were used. Various related books, journals, documents and annual reports that were available from the under study company and online materials were used.

3.3.3 Procedures of Data collection:

The study relied on primary data using self-administered questionnaire, interview and through personal observation at the site. Questionnaire was formed in two different languages (Amharic & English) for site workers, Engineers and management. Structured self-administrated questioner was distributed to respondents by enumerator. The researcher was conducted interview for managerial level management staff directly to as semi structured questions and records their responses at the respondent's office. The study also employed the test-re-test method to assess the survey instrument valid and reliable.

3.4 Reliability and Validity

3.4.1 Reliability

Reliabilities refer to the stability of the measure used to study the relationship between variables (Ghauri and Gronhaug 2005). The questions in the questionnaire were designed taking into considerations the issues related to the problem and goals of the study on the subject. To assure the reliability of the instrument the most commonly used method in

internal consistency analysis for Likert type questionnaire Crombach-Alpha reliability Coefficients were used.

In survey based research it is important to validate the scales used for reliability and validity. Gleam & Rosemary (2003) explained that ―Oftentimes information gathered in the social sciences, marketing, medicine, and business, relative to attitudes, emotions, opinions, personalities, and descriptions of people's environment involves the use of Likert-type scales.

Cronbach's Alpha

Cronbach's alpha is a coefficient (a number between 0 and 1) that is used to rate the internal consistency (homogeneity) or the correlation of the items in a test. Cronbach's alpha will generally increase as the inter correlations among test items increase, and is thus known as an internal consistency estimate of reliability of test scores. Cronbach's alpha is widely believed to indirectly indicate the degree to which a set of items measures a single construct (Wale, 2014) provide the following rules of thumb: > .9 Excellent, > .8 Good, > .7 Acceptable, > .6 Questionable, > .5 Poor, and < .5 Unacceptable. If correlations between items are too low, it is likely that they are measuring different traits and therefore should not all be included in a test that is supposed to measure one trait.

Accordingly, this study overall reliability statistics, Cronbach's Alpha coefficient result was 0.934 and all other construct were above 0 .70 which is acceptable based on the scholars.

Table 3.1 Case processing Summary

	No	%
Valid	30	100.0
Excluded	0	.0
Total	30	100

a. Listwise deletion based on all variables in the procedure.

Over all Reliability Statistics

Cronbach's Alpha	No of Items	%
.934	35	93%

Source: pilot survey study (2015)

3.4.2 Validity

Validity refers to the extent of accuracy of the results of the study. Hence ensuring validity of the data collection instrument involved going through the questionnaire in relation to the set objectives and making sure that it contains all the information that can enable answer these objectives. (Najanja, Maina and Najagi, 2013cited by Wale Yirga (2014). To appraise the validity of the instrument of this study, to measure the suitability of the questionnaire it was tested by sample respondents before mass distribution.

3.5 Method of data analysis

The researcher used Statistical Package for Social Science (SPSS) version 20 software tool to process the data. The study was processed the questionnaire responses before analysis by editing, coding, and classifying data then, it subsequently tabulated and descriptive statistics such as the mean, frequencies, standard deviation and percentages calculation was employed. Qualitative data by interview and personal observation was incorporated for the analysis. Differences was considered to be significant, when P-Value was less than 0.05($P<0.05$).

3.6 Data Quality Management

The researcher was delivered orientation on data collection procedures, how to keep the quality, its completeness, and timely recording of data was given for data collectors. Pre-testing for questionnaire was done on10 construction site workers to assure the quality of the data and improvement of data collection tools. Supervision during data collection was done to understand how the data collectors were handled the questionnaire and each fill questionnaire was checked for its completeness, accuracy, clarity, and consistency on daily basis finally it was encoded and analyzed by the researcher.

3.7 Ethical consideration

Ethical clearance was obtained from Addis Ababa University, School of Commerce wrote a letter to Zamra Construction Company for pertaining information regarding to Occupational safety and health management systems in Zamra Construction Company.

Before data collection the researcher was communicated the importance of this research to respondents, and the researcher was committed to respect the rights, needs, values, and desires of the respondents.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter included analysis and discussion of the results that have been collected from field surveys and interview. Data was analyzed using SPSS descriptive statistical tool. Descriptive analysis was performed after accepted reliability tests. 92 questionnaires were distributed to the respondents of the Zamra construction company. This chapter included the personal information and profile of the respondents, descriptive statistics of variables, contextual qualitative analysis of personal interview, observation and secondary data, and finally the summary framework of the results.

4.1 Results of the study

4.1.1 Demographic Characteristics of the Respondents

The target respondents of the questionnaire survey were construction workers in Zamra Construction Addis Ababa sites (Betemengest-two sites, Piazza-two sites, Arat Kilo, and Mesalemiya. Ninety two survey questionnaires were distributed to the construction workers in ZamraConstruction Company. This section analyzed the personal characteristics of 92 respondents who were returned valid questionnaire for this study. It covers the personal data of respondents, such as gender, age, marital status educational background and work experienceatZamra Construction Company. The following subsequent tables will reveal the total demographic characteristics of the respondents.

Table. 4.1 Demographic Characteristics of Respondents

Item	Description	Frequency	Valid percent
1. Gender	Male	66	71%
	Female	26	28%
	Total	92	100%
2. Age	18-29	47	51%
	30-40	35	38%

Item	Description	Frequency	Valid percent
	41-50	8	9%
	>50	2	2%
3. Marital status	Single Married Widowed	51 40 1	55% 44% 1%
4. Education	Illiterate	1	1%
	Read & Write	2	2%
	Primary (1-8)	19	21%
	Secondary(9-12)	15	16%
	Technical & Vocational school	17	19%
	First Degree	32	35%
	2nd degree & above	6	7%
5. Experience	< 2 years	25	27%
	2-4	27	29%
	5-7	26	28%
	8-10	9	10%
	>10	5	5%

Source: Questionnaire data 2015

As shown in table 4-1, item 1 indicates that 71% (66) of the respondents are male whereas28% (26) are female. It implies that the gender balance is inclined towards male employees.

In the table item 2 indicates age category, the highest group of respondents 47 (51%) fall under age category of 18-29. The next higher group 35(38%) and 8 (9%) fall under age category of 30-40 and 41-50 respectively. This implies that about 89% of the respondents are below 40 years of age. The remaining group 9% (35) under the age category of less than 50 and the last category 2(2%) respondents are the age of 50 and above.We can say the company is said to be filled by active workforce who are demands high safety and health care.

Regarding Item 3 in table 4.1 shows marital status 51 (55%) aresingle while 40 (44%) of the respondents are married, the rest 1(1%) of respondents are widowed. It implies that majority of the respondents are single in the company.

The above table 4.1item 4 also demonstrates educational background of the respondents. As indicated in the table, 32 (35%) of the total respondent are first degree holder followed by primary school (1-8) 19(21%) then, 17(19%) and 15(16%) are Vocational and Secondary (9-12) school respectively. The rest 6(7%) 2nd degree and above, 2(2%) Read and write and 1(1%) are illiterate.This shows that the work force is educated and can easily train to improve individual and group safety and health management issues.

ZamraConstruction Company has been in operation for more than 14 years. However, the above table 4.1 item 5 indicated that about 29(29%)of the total respondents have between2-4 years' experience; 27(28%) of the respondents between 5-7 years' experience; 25 (28) respondents less than two years of experience in the companythe rest 9(10%) between 8-10 years' experience and 5(5%) of the respondentshave been above 10 years' experience.
Majority (29%) of respondents in the company have relatively lesser work experience this implies that at construction Companies skilled manpower are working at contract base and changing their work place frequently.

4.1.2 Assessment result on effectiveness of OSHMS

Introduction

In this section the researcher has tried to assess the general effectiveness of occupational safety and health management systems at Zamra Construction Company. It was developedwith five point Likertscales 5= strongly agree, 4=agree, 3= Neutral, 2=disagree and 1=strongly disagree, the intervals for breaking the range in measuring each variable, i.e. Organizational safety and health policy, management commitment, employee involvement, health and safety work place inspection

The translation of level ranking is analyzed based on the following criteria designed by Best (1977:174) as cited by Gebeyaw, 2014)
Agreement level 3.41 – 4.20 means agree

Agreement level 4.41 – 5.00 means strongly agree

Accordingly, the researcher compute arithmeticmean as per the above mentioned level of agreement above and equal to 3.41 mean can enable the researcher to say occupational safety and health management system is effective at Zamra Construction Company.

Table 4.2: Organization Safety and Health Management System Policy effectiveness

Item	Mean	Std. Deviation
Written Occupational Safety and health management Policy in place	3.93	.768
The organization's safety policy clearly states accountability & responsibility of managers, supervisors & workers	3.72	.964
The safety policy encourages the reporting of work-related injuries and illnesses	3.78	.924
The safety rules, policies and procedures are up dated regularly	3.05	.987
The health & safety policy has room of continuous improvement	3.09	1.002
Aggregate mean	**3.50**	**.6142**

Source: Questionnaire, (2015)

Table 4.2 above indicated that atZamra construction company, Occupational safety and health management system policy in place (Mean = 3.93); Organizations safety policy clearly states accountability and responsibility of managers, supervisors and workers (mean = 3.72); the safety policy encourages the reporting of work-related injuries and illnesses (mean=3.78) these items are shows positive impact for the effectiveness of OSHMS policy in Zamra construction company. However, Zamra construction company didn't well considered updating safety rules, policies and procedures on a regular basis (mean =3.05) and the health and safety policy has lesser room of continuous improvement (3.09). This result collectively shows the mean =3.5 which is above agreed mean 3.41. Moreover this result allied with the interviews as well as the researcher observation there is organized and written OSHM policy in place. But specifically

Zamraconstruction company management has less attention to revise and follow up the policies and procedures with regard to occupational safety and health management system policy

Table 4.3: Management commitment towards occupational safety and health management system effectiveness

Item	Mean	Std. Deviation
Management highly involved in occupational safety and health management planning, implementation & monitoring	3.14	1.135
Management allocates sufficient financial & non-financial resources	3.09	1.145
Personal protective equipment properly provided to all construction workers	2.90	1.241
Management encourages discussion on safety between the workers & the management	2.99	1.218
Management committed to integrating productivity, safety and Quality	3.20	1.112
Prepared safe operating procedures or specific safety instructions relevant to its operations	3.21	1.105
Management encourage safe working behaviors	2.98	1.158
Management provide first aid kit on site that contains sufficient materials	3.36	1.201
Management assigned professional person on duty to give a first aid service on site	3.82	1.167
The organization has documented incident investigation procedures	3.51	1.084
Aggregate mean	**3.22**	**.8211**

Source: Questionnaire, (2015)

According to table 4.3 above management commitment towards Occupational safety and health management system, their involvement in planning and monitoring, allocating sufficient resources and very badly the personal protective equipment are not delivered effectively to the construction workers and management is not encouraged or reward employees for safe workplace practice. Moreover the management didn't encourage a discussion between the workers and the management in relation to safety.

Concerning to safe working practice and procedure indicated that company prepared safe operation procedures relevant to its operation (Mean = 3.21). This implies that management

has less attention forsafe working practice and procedure. The respondent of management encouraging supervisors and co-workers for safe working behaviors shows (mean = 2.98). This result indicated that management is not encouraging employees for their safety and health effort.The respondents of management avail first aid kit in place at construction site with sufficient materials (mean=3.36). This result also showed below the agreed mean that first aid kit is not sufficiently in place at construction sites; management assigned trained personnel on duty to give first aid service shows (mean=3.82), this result implies that there is trained personnel in construction site. In the response of documented incident investigation procedures (mean 3.51)showed that management has documented incident investigation procedures. In general the aggregate mean of management commitment towards OSHMS ismean= 3.22implies that less management involvement towards OSHMS and employees are highly exposed for unsafe working practice.This result collectively leads the research to conclude that the management commitment towards occupational safety and health management systems is not effective at Zamra Construction Company yet.

Table 4.4: Employee Involvement towards Occupational Safety and Health Management System Effectiveness

Item	Mean	Std. Deviation
Making of the organization's safety & health policy	2.90	1.139
participation in OSHM training decision making	3.25	1.135
Safety training and orientation for all employees	3.27	1.130
Participate in hazard prevention, control and evaluation activities	3.36	1.095
Health and safety committee	2.72	1.198
Safety committee has plan, implementation and inspection	2.24	1.199
Potential safety and health threats information	3.22	1.147
Assigned subject matter expert	3.64	1.075
assignment of safety and health responsibility is attached to an accountability mechanism	3.45	.953
Assigned safety & health responsibility are authorized and supplied with the necessary resources(s) to carry out their duties.	2.87	1.061
Aggregate mean	**3.09**	

Source: Questionnaire, (2015)

Table 4.4 above indicated that in Zamra construction company, employee participation making of organization's safety and health policy shows Mean = 2.90.This implies that employees are not involved in making of OSHM policy. In the opinion of employees are allowed to participate in Occupational Safety and Health Management training decision making the mean result shows 3.23. This result also implies that less employee involvement in decision making about safety and health of employees. Concerning to safety training and orientation are giving for all employees at the beginning and periodically, the mean result shows 3.27. This result implies that employees have not updated information about safetyregularly.Employeesparticipation in hazard prevention, control and evaluation activitiesalso showsmean 3.36 this implies that less employee participation concerning to hazard prevention. The response of health and safety committee exist (mean=2.72) and safety committee has plan, implementation and inspection (mean=2.24). This result showedthat absence of safety committee in the construction site. The opinion of respondents that potential safety and health threats information result mean=3.22. This result also employees have less information about potential safety and health threats. The respondent of assigned subject matter expert for Occupational health and safety management (mean = 3.64). This result implies that the company assigned subject matter expert for OSHMS but the respondents argued that assignment of safety and health responsibility is attached and supplied with the necessary resources (mean=2.87). Interviewees' opinion on this regard implies that due to the busy work environment the safety committee is not functional and the researcher also observed that there is no safety committee in ZamraConstruction Company. Regarding the interviewee's opinion on assignment of safety and health responsibility supplied with the necessary resources, there are different ideas, some of them agreed that management allocate sufficientresources to maintain safety and health at the work place but, others argued that there is no pre-planned budget for health and safety, but on demand the management released insufficient budget.This result aggregate mean showed that mean= 3.09. This result collectively implies that employee involvement towards OSHMS effectiveness is not yet effective.

Table 4.6: Safety Work Inspection and Audit with regarding safety and health management system

Item	Mean	Std. Deviation
Regular health and safety inspections at worksites	3.26	1.137
Standard workplace inspection checklists	2.90	1.120
Employee enable to report hazards at workplaces	3.20	1.051
Conducts internal OSH inspection and audit on a regular basis	2.90	1.110
The machines on site are inspected by professionals periodically	3.66	.929
Occupational safety management system inspection implemented with the assistance of OSH experts	3.51	1.084
A system for recording and analyzing health and safety performance statistics	2.92	1.160
Disclosed information on company health and safety performance regularly	2.67	1.101
Regular evaluation on safety and health effort	3.45	1.113
Aggregate mean	**3.16**	**.7265**

Source: Questionnaire, (2015)

Table 4.6 above indicates that safety inspection and Audit in Zamra construction company result showed that the opinion of respondents regarding to regular health and safety inspections shows (mean=3.26);the opinion of respondents that employee enable to report hazards at workplaces (mean = 3.2). This result implies that regular inspection and report hazards at work places are not adequately practice. However, machines inspected by professionals (mean=3.66) and occupational management system inspection supported by subject area expert (mean=3.51) result moderately satisfactory whereas standard workplace inspection checklists (mean=2.90) and internal occupational safety and health inspection and audit on a regular basis(mean=2.90) these result implies that there is no standard workplace inspection checklist and Occupational health and safety inspection and audit on a regular basis. Concerning to recording and analyzing health and safety performance statistics the above table shows mean=2.92 and information on company health and safety performance regularly shows mean=2.67. This result shows badly there is no analyzed safety performance and the management has not provided information to employees. Regarding to regular evaluation on safety and health effort (mean=3.45). This result shows regular evaluation on

safety and health effort adequately implement. The researcher observation and interviewees' opinion on this regard shows that there is no analyzed statistical performance document in the organization. Though, there is no trend to analyzed performance statistically, occupational injuries and other on the job accident decreased since the occupational safety and health management system established. Depending on the aggregate mean 3.16 this result leads to conclude that Zamra Construction Company has poor communication regarding to occupational health and safety management system

Hence collectively the researcher can enable to conclude that work place safety and health inspection and audit tools practice are not effective in Zamra Construction Company. particularly, inspection checklist, regular bases inspection and audits leads to conclude that management has less concern for occupational health and safety inspection checklist and disclosed information on company health and safety performance regularly not .practice in Zamra construction.

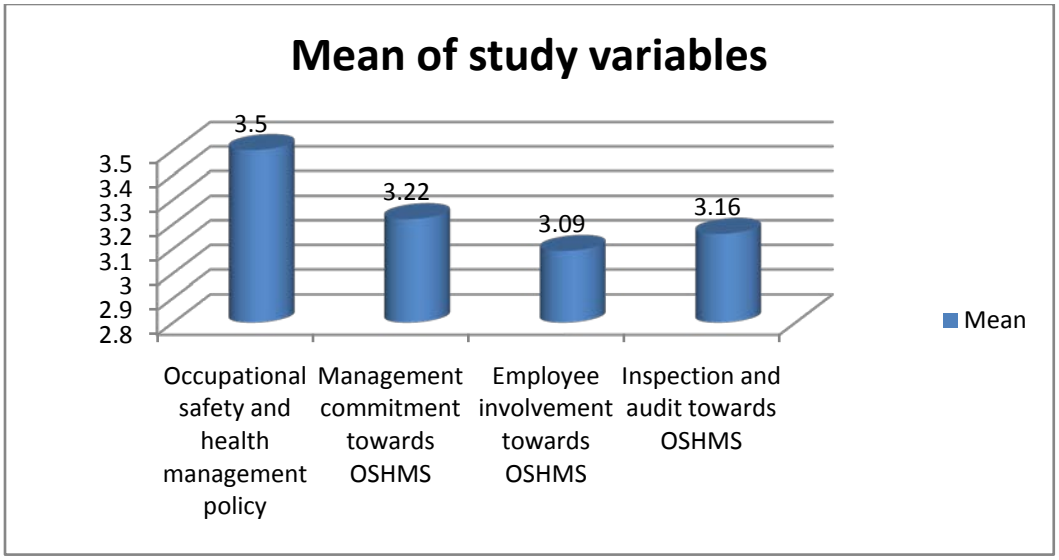
Tale 4.7: Overall effectiveness of Occupational Safety and Health Management system

Variables	Mean (Aggregate)	Std. Deviation
Occupational Safety and Health Policy	3.50	.6142
Management commitment	3.22	.8211
Employee involvement	3.09	.7530
Work place inspection and audit	3.16	.7265
Overall mean	**3.22**	**.7248**

Source: questionnaire (2015)

The above table 4.7 shows the result of overall effectiveness of occupational safety and health management system at Zamra Construction Company. In this regard the aggregate mean of occupational safety and health policy is 3.50. This implies that the company has written occupational safety and health management system policy with clearly state every concerned body responsibility and accountability in the organization. However,Management commitment towards occupational safety and health management system the result showed that mean 3.22 which is below the agreed mean for measurement of OSHMSeffectiveness. Hence this result implies that Occupational safety and health management systems are not well supported by management especially management is not encouraging employees and supervisors for safe work practice. Regarding to employee involvement/participation towards occupational safety and health

management, the result shows that mean=3.09. It implies that employees have not active participation towards their occupational safety and health management activities. This result enables to conclude that employee involvement is not yet effective in Zamra construction. Concerning to Inspection and Audit the result revealed that mean = 3.16 this is also below the agreed mean of 3.41 to be effective implementation.



Figures 1: Overall effectiveness of occupational safety and health management system

As figure 1 indicated that except Occupational safety and health management policy, all other variables showed below the agreed mean 3.41 which is enable the researcher effective or not. Therefore, overall analysis in the research framework shows mean=3.24. It implies that there is Occupational safety and health management practice in Zamra Construction Companybut it is not effectively implemented.

4.2 Discussion of Results

Based on the researcher's specific objective, this sectiondiscussed the result of the statistical analysis incorporated with interview result, secondary data and personal observation.

4.2.1 Organizational policy towards OSHMS

According to Armstrong, 2009;Alli, 2008, Wagen, 2007 stated that Occupational safety and health policy should be in written form and cover the organizational arrangements to ensure occupational safety and health and required to demonstrate that top management is concerned about the protection of the organization's employees from hazards at work and to indicate how this protection will be provided. In this section the investigator examined five items to

evaluate the effectiveness of Zamra construction company occupational safety and health management system policy.

The first item of this section was, either OSHMS policy in place or not, the majority of the respondents 84.5% (**mean=3.93**) reported that there is written OSHM policy in the organization; 78.3% (**mean=3.72**) of respondent opinions shows the organizations safety policy clearly states accountability and responsibility of managers, supervisors and workers. Regarding thecompany safety policy encouragement to the reporting of work-related injuries and illnesses, 78.3% (**mean=3.78**) agreed that the safety policy encourages to report work related injuries and illnesses.On the other hand, only 34.5% (mean=**3.05**) of the total respondent agreed with updating of OSHM policy regularly and 36.9 %(**mean=3.05**) reported that health and safety policy has room of continuous improvement of occupational safety and health management system of the organization. As the result shows aggregate mean of organizational policy at Zamra construction met the agreement level mean =3.41. This result supported by interview, and secondary data that organized written and signed organizational Occupational safety and health policy in place.Health and safety policy in Zamra construction is fairly aligned with the literature review. Therefore, the researcher enables to conclude that occupational safety and health management policy at Zamra construction is moderately satisfactory.

4.2.2 Management commitment towards OSHMS

The second crucial variable was management commitment. In this regard there are 10items present to evaluate the effectiveness of management commitment.

Management involvement and engagement in actions is essential to achieve OSHMS goal (Cooper, 2006). In this study 50.0%**(mean=3.14)** of the respondent believed that management is highly involved in occupational safety and health management planning, implementation and monitoring. Regarding to management of the organization allocation of sufficient financial and non- financial resources to maintain its Occupational safety and health management, 47.3 %**(mean= 3.09)** of the respondents were agreed; 40.3% **(mean=2.90)** were agreed on personal protective equipment provision to all construction workers. Opinion of the respondent on the management of the company encourages discussion on safety between the workers and the management agreed only 43.5%**(mean=2.99)** while 48.8% **(mean=3.20)**agreed on the company management

committed to integrating productivity, safety, and quality. The interview result moderately lineup with this result except some of the interviewee deviate they believe that personal protective equipment distributed for all construction workers. During the researcher observed the site, all employees wear safety cloth and Helmet but some of the employee didn't wear glove and safety shoes. Health and safety is a management function, and requires extensive management commitment and involvement to ensure overall organization's safety and health of employees. Regarding to the company prepared safe operation procedures relevant to its operation the result indicated that, 54.4%(Mean = 3.21); management encouraging supervisors and co-workers for safe working behaviors 9.5% (mean = 2.98); provide and keeping first aid kit in place at construction site with sufficient materials 59.8%(mean=3.36); management assign trained personnel on duty to give first aid service 76.1%(mean=3.82); documented incident investigation procedures 63% (mean 3.51).The labourproclamation377/2003, Article. 92 clearly spelled out, the fundamental obligations of an employer with regard to putting in place of all the necessary measures in order to ensure work places are safe, healthy and free of danger to the well-being of workers and take appropriate pre-executions to ensure that all processes of work shall not be a source or cause of physical, chemical, biological, ergonomic and psychological hazards to the health and safety of the worker..Overall result of management commitment towards occupational safety and health management systems aggregate mean shows mean = 3.22. The result moderately deviated from literatures and leads to conclude that management commitment towards occupational safety and health is practicing in Zamra construction but not effective yet.

4.2.3 Employee involvement onOccupational safety and health management system

Regarding the third variable, there are ten items present to assess the effectiveness of occupational safety and health management at Zamra construction. The first item making of the organization's safety and health policy and decision making on OSHM training plan 39.1**%(mean=2.90)** and 52.2%(**mean=3.25**) respectively. 53.3 **%(mean=3.27)** were agreed on safety training and orientation are given for all employees at the beginning and periodically. The respondent opinions on employee's participation in hazard prevention, control & evaluation activities 57.6% (mean=**3.36**) were agreed.**Aggregate mean=3.19**. As described by ILO, 2001; Bernard, 2003, Torrungton et al 2008 and Armstrong 2006 in the literature review of this study, employee involvement has a principal to an effective safety

management and a behavioral-oriented technique that involves individuals or groups in the upward communication flow and decision-making process within the organization.

In this regard, literatures specified that consultation covers a wide range of activities like to inform and educate employees to play a reliable and supportive role in a management driven Occupational safety and health management systems. According to Afework (2011) an active safety committee is a great spur to safety; its primary purpose is to enable management and workers to work together to monitor the site safety plan so as to prevent accidents and improve safe working conditions on site. However the respondents of this study agreed that the presence of workplace health and safety committeemean27.2%(2.72), whereas 20.6% (mean=**2.24**) respondents agreed safety committee of the company has its own plan, implementation and inspection systems.This result is not allied with the literature review. 52.2% **(mean=3.22**) of the respondent were agreed on the provision of full information for employees about potential safety and health threats. Regarding to the skills and knowledge of the assigned personnel on safety and health responsibility, 68.5 %(**mean=3.64)** of respondents agreed that the individual has the necessary skill and knowledge and 61.9(**mean=3.45)** assignments of safety and health responsibility is attached to an accountability mechanism. 32.6 %(**mean=2.87**) agreed assigned safety and health responsibility are authorized and supplied with the necessary resources to carry out their duties.This result deviate from the concept of the literature and the researcher can enable to conclude that the employee involvement in safety and health management of Zamraconstructioncompany is very weak. However literatures emphases that Employee involvement towards occupational safety and health management is crucial to encourage healthy work place environment.

4.2.6 Inspection/Audit towards occupational safety and health management system

Findings on thevariables associated with successful work place inspection and audit. This section investigated the level of inspection and audit at Zamra Construction Company. The result shows that **54.4% (mean=3.26)** of respondents reported regular health and safety inspections are undertaken at worksites. According to the opinion of **36.9 %(mean=2.90)** respondents, standard workplace inspection checklists are used to conduct health and safety inspections and **52.1% (mean=3.20)** agreed withthe availability of procedure by which

employees can report hazards at workplaces.**36.9% (mean=2.9)** respondents acknowledged that the organization conducts internal occupational health and safety inspection and audit on a regular basis. Regarding to construction site machines, **69.5 %(mean=3.66)** of respondents agreed that construction heavy machines are inspected by professionals periodically and **66.3%(mean=3.51)** believe that Occupational safety management system inspection processes are implemented with the assistance of safety and health expert.Concerning to a system for recording and analyzing health and safety performance statistics were agreed 38%(**mean=2.92**) while the respondents of employees are regularly provided with information on company health and safety performance were 32.6% (**mean=2.67)** and respondent opinion on regular evaluation of safety and health effort were 45.2(**mean=3.45).**The Aggregate mean of Inspection and Audit in Zamra construction shows 3.16 which is below 3.41 mean to be effective**.** It is essential to inspect and audit the performance for hazard and value effectiveness of the action in eliminating it or least reduced it to acceptable level (Hendrix et al. 2002).Inspection and audit practice in ZamraConstruction Company is not allied with the literature review. Hence the researcher conclude that there is a practice but not effective yet.

4.2.8 Overall effectiveness of occupational safety and health management system

This section deals with the overall effectiveness ofZamraConstruction Company occupational safety and health management system. The result of occupational safety and health policy mean equals 3.50. This implies that it is fairly effective.Management commitment towards occupational safety and health management systemscore mean equals 3.22, which is below the agreed mean of 3.41. This implies that there is less commitment from the management towards health and safety management of the company. The employee involvement towards occupational safety and health management aggregate mean result shows 3.09. It is also below the mean level 3.41. This result implies thatEmployees are not adequatelyinvolved for their safety and health issues. Thework place inspection and audit mean equals 3.16; this is also below the agreed mean 3.41. Hence, the work place inspection and audit in the company is practicing unsatisfactorily. In general, aggregate mean of independent variables is 3.24. This result indicated that OSHMS is not effectively implemented in Zamra Construction Company.

CHAPTER FIVE

SUMMARY, CONCULUSION AND RECOMMENDATION

Introduction

This final chapter contains the summary, conclusionand recommendations parts of the study. This report assessed the effectiveness of occupational health and safety management systems (OHSMS) in Zamra Construction Company.This chapter concludes the major findings in combination with the main purpose of the study. Finally, the suggested recommendations for effective occupational safety and health management systems were presented.

5.1 Summaryand conclusion of the major findings

This study reviews the effectiveness of occupational health and safety managementSystems of ZamraConstruction Company.For this study 92 questionnaires were distributed to the respondents all questionnaires (100%) were properly filled and returned.

Based on the demographic characteristics, the majority of the respondents were male, 71.2% while 28.3% of them were female.It implies that gender balance tending to male employees. In terms of age composition taken from the sample, almost 89.1% of the participants were under 40 years old who are supposed to be more active workforces. Regarding company employees work experience, 51.5%of the participant's hadless than 5 years in the organization, 38.1% of the participants had 5-10years and 5.4% of the participants had above 10 years. Regarding the respondents educational level 41.1% of respondents havefirst and second degree holders, 18.5% of the participants were technical and vocational school graduate,while 16.3% and 20.7% respondents education level were high school and elementary school respectively. From the respondent of the study only 1.1% was illiterate while 2.2% were able to read and write. Regarding marital status of the respondents, the findings shows that55.4% of the participants were single while 40(43.5%) were married and 1(1.1%) was widowed.

Based on the researcher framework this section summarized and conclude descriptive statistics results. The result showseffectiveness of Occupational safety and health management systemin Zamra Construction Company.

The first item of this section was, either OSHMS policy in place or notwhich scored (mean= 3.50). It implies that OSHMS policy in general fairly effective but in particular, there is a gap in updating of the policy and room of continues improvement for OSHMS policy; regarding toManagement commitment towards OSHMS mean result shows that 3.22it implies that management commitment towards OSHMS is not satisfactory to ensure the OSHMS fully implement in construction sites. Hence management commitment towards occupational safety and health management system is not effective yet. This study result also indicated that employee involvement towards OSHMS mean=3.09. This result implies that employee involvement is less to ensure the implementation of OSHMS. Finally the fourth variable, health and safety work place inspection and audit towards OSHMS the study result shows that mean=3.16. This result also indicated that below the agreed mean value 3.41. Hence health and safety work place inspection and audit towards OSHMS is unsatisfactory to ensure effective health and safety management system implementation in ZamaraConstruction Company. The overall independent variables aggregate mean shows 3.24. It implies that Occupational safety and health management system in Zamra Construction Company is not yet effective.

To conclude that concerning the work environment and work condition, in the company there are elements which adversely affect the safety and health management system effectiveness.

Concerning to OSHMS policy the result lineup with the literature but specifically policy updating and room for continuous improvement shows less attention from the management.

Regarding to management commitment towards OSHM the result revealed that there is less commitment for their employees' safety and health management.

Concerning to Employee involvement result also shows the employee is not good enough participate towards Occupational safety and health management system effectiveness.

This result also indicatedthat inspection and audit towards occupational safety and health shows inadequate implementation.

Generally, the researcher conclude that based on a thorough review of literatures and comparing with this study result, the existing conditions in Zamraconstructionidentified the gaps that could be encountered in Occupational safety and health management system effective implementation.As a result of thirty five measurement items, the situation of occupational safety and health management atZamraConstruction Company remains to be at its premature stage for effectiveness. Presently, there is no much strength in the occupational safety and health management system in relation to OSHM policy updating and continual improvement, management commitment towards occupational safety and health management, employee involvement on occupational safety and health management activities and implementation of inspectionand Audit towards Occupational safety and health management systems.

5.2 Recommendation

On the basis of current research result obtained from questionnaire survey and interviews, the researcher forwarded the following recommendations to the under study construction company and other researchers in the area.

- The construction company under the studyfindings showed that there is no OSHM updating and improvement, therefore, the organization should be improved updating policyregularly and enable it for continues improvement of occupational safety and health management system policy.

- Management commitment is crucial for effective Occupational safety and health management system in the organization.According to (ILO-2011) management commitment and consultative arrangements are twin pillars and complementary. Without both commitment and participation, health and safety management systems cannot work. However, the result of the under study company reveals there is low management commitment towards OSHMS. Hence, management commitment should be increased and provide visible top management involvement in implementing the program towards the effectiveness of Occupational safety and health of employees.

- An effective occupational safety and health management system requires integration into broader work place management systems. Hence the company should be integrating health and safety into broader management systemsand practices which connect occupational health and safety to business planning, or quality/best practice management initiatives.

- Employee involvement/participation provides the means through which workers develop and express their own commitment to Safety and Health protection. Hence, the company should encourage employeesto involve in the Health and Safety Management System and provide an opportunity to give feedback on health and safety issues at the work site and in decisions that affect their safety and health i.e. inspection or hazard analysis teams; developing or revising safe work rules; policies, training new hires or co-workers; assisting in accident investigations and inspections.
- Safe work practices and procedures are crucial to ensure employee's safety. This study revealed that there is inadequate safety practice in the organization. Hencethe company

should be improve to prepare safe operating procedures or specific safety instruction relevant to its operation, provide standard and suitable personal protective equipmentlike gloves, helmets and safety shoes, close, eye goggle, dust max and deliver on time and enforce employee to wear their personal protective equipment every working time.

- The health and safety committee offers employees an opportunity to become more actively involved in creating and maintaining interest in health and safety. This study indicates that absence of safety committee, hence, the researcher suggest that the management should support safety committee to be functional to address health and safety concerns that cannot dealt with in the course of daily work and to offer recommendation for improvement to site health & safety.
- This study also disclosed poor employee consultation. Hence the company should be improveoccupational safety and health consultation through form safety committee; and encouraging them for proactive participation to OHS issues to ensure that workers have an input into managerial decision making when preventive and protective measures are being developed, by reflecting their views, concerns and ideas.
- It is essential to monitor the hazard and value the effectiveness of the action in eliminating it or least reduced it to acceptable level (Hendrix et al. 2002). Hence, the organization should create system for recording and analyzing health and safety performance statistics and regular evaluation of safety and health effort and regularly provided with information on company health and safety performance.

- The weak safety management system shows down the operation adds to the cost increased construction business failure.Thus, this company should be build safety into the pre-bid planning in the same way that all other pre-bid factors are considered.

- Finally, the researcher suggests that this study measures occupational safety and health management systems from four perspectives i.e. OSHM policy, management commitment towards OSHM, employee involvement on OSHM practices, work place inspection and audit. Future researches therefore may consider in the areas like government policy and directive on construction and labor law enforcement in the area of occupational safety and health management systems for effective implementation in the construction industry.

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APPENDIX

Appendix I: Questionnaire

Addis Ababa University
School of Commerce
Post graduate studies

Dear respondent,

I am a student of Addis Ababa University, School of Commerce doing my Thesis for the partial fulfillment of MA Degree in Human Resource Management. This questionnaire is designed to collect information about **effectiveness of Occupational Safety and Health Management System atZamra Construction PLC.** Since successful completion of this study depends on your genuine response. So I kindly request your cooperation to respond all of the following questions which are designed require a minimum time for the completion. Your response will be treated as strictly confidential and will be used only for academic purpose.

Thank you in advance for your kind cooperation!

Part One: Socio demographic characteristics

Sex: Male ☐ Female ☐

Age: 18-29 ☐ 30-40 ☐ 41-50 >5 ☐ ☐

Marital Status: Single ☐ Married ☐ Divorced ☐ Widowed ☐

Educational level:

IlliterateR ☐nd write ☐y school (1-8) S ☐lary school (9-12) ☐

Technical & vocational school ☐ first Degree ☐ 2nd degree and above ☐

How long have you served in this construction company:

Less than two years ☐8-10 ☐ove10 ☐ ☐ ☐

The following statements are used to measure the effectiveness of Occupational Safety and Health Management Systems in your organization. Please indicate your view by putting **'✓' mark** under the five point Likertscale box corresponding to each statement: 5 = strongly disagree; 4 = Disagree; 3 = neutral ; 2 = Agree; 1 = Strongly Disagree

S/N	Description	strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Organization Policy					
1	My organization has written occupational safety & health policy in place?					
2	The organization's safety policy clearly states accountability & responsibility of managers, supervisors & workers					
3	The company safety policy encourages the reporting of work-related injuries and illnesses					
4	The safety rules, policies and procedures are up dated regularly					
5	The health & safety policy has room of continuous improvement of OHS management system of the organization					
	Management Commitment					
6	The management is highly involved in occupational safety and health management planning, implementation & monitoring					
7	The management of the organization allocates sufficient financial & non- financial resources to maintain its Occupational safety and health management					
8	Personal protective equipment is properly provided by the company to all construction site workers					
9	The management of the company encourages discussion on safety between the workers and the management					
10	Management is committed to integrating productivity, safety, and quality					
11	The company prepared safe operating procedures or specific safety instructions relevant to its operations					
12	Supervisors and co-workers encourage safe working behaviors					
13	There is a first aid kit on site that containssufficient materials					
14	There is a person on duty to give a first aid service on site					
15	There is a documented incident investigation procedures					
16	Sometimes the workers ignore safety rules or policies in order to carry out an assignment to meet the schedule					
	Employee involvement					
17	Employees participate in the making of the organization's safety & health policy					

S/N	Description	strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Employees are allowed to participate in OSHM training decision making					
19	Safety training and orientation are given for all employees at the beginning and periodically					
20	Employees do participate in hazard prevention, control & evaluation activities					
21	There is a workplace health and safety committee					
22	The safety committee of the company has its own plan, Implementationand inspection systems					
23	All employees are fully informed of potential safety and health threats					
24	Individuals with assigned safety & health responsibility have the necessary knowledge and skills					
25	Each assignment of safety and health responsibility is attached to an accountability mechanism					
26	Individuals with assigned safety & health responsibility are authorized and supplied with the necessary resource(s) to carry out their duties.					
27	**Health and safety work place inspection**					
	There are regular health and safety inspections at worksites undertaken					
28	standard workplace inspection checklists are used to conduct health and safety inspections					
29	There is a procedure by which employees can report hazards at workplaces					
30	The organization conducts internal OSH inspection and audit on a regular basis					
31	The machines on site (cranes,excavators,etc) are inspected by professionals periodically					
32	Occupational safety management system inspection processes are implemented well with the assistance of OSH experts					
33	There is a system for recording and analyzing health and safety performance statistics					
34	Employees are regularly provided with information on company health and safety performance					
35	There is a regular evaluation of safety and health effort					

Appendix II.Interview Questions

1. How do you communicate OSHMS policy with the work force?
2. Are there periodical meetings between management and workers to take decisions affecting workforce safety and health practice?
3. Is there a practice of evaluating the effectiveness of OSHMS. If there is how do you evaluate?
4. Do you provide training for new entrants in the area of safety and health?
5. Is there periodical training provided to all works exposed to hazardous work exposure?
6. How do you express the company's effort towards creating awareness and safety and health procedure?
7. Do you provide sufficient and standard personal protective Equipment
8. Do you to vary the safety equipment (safety kits) for all workers who are exposed to hazard?
9. Is there any mechanism that has been taken to ascertain proper utilization of safety and health kits by employees of the company?

Appendix III.Statistical result frequency tables

Occupational health and safety policy

Item	Level of agreement	Frequency	%	Mean	Std. Deviation
Written OSH Policy in place	Strongly Disagree	2	2.2	3.93	.768
	Disagree	3	3.3		
	Neutral	9	9.8		
	Agree	63	68.5		
	Strongly agree	15	16.3		
The organization's safety policy clearly states accountability & responsibility of managers, supervisors & workers	Strongly Disagree	4	4.3	3.72	.964
	Disagree	8	8.7		
	Neutral	11	12.0		
	Agree	56	60.9		
	Strongly agree	13	14.1		
The company safety policy encourages the reporting of work-related injuries and illnesses	Strongly Disagree	1	1.1	3.78	.924
	Disagree	13	14.1		
	Neutral	6	6.5		
	Agree	57	62.0		
	Strongly agree	15	16.3		
The safety rules, policies and procedures are up dated regularly	Strongly Disagree	3	3.3	3.05	.987
	Disagree	27	29.3		
	Neutral	30	32.6		
	Agree	26	28.3		
	Strongly agree	6	6.5		
The health & safety policy has room of continuous improvement of OHS management system of the organization	Strongly Disagree	4	4.3	3.09	1.002
	Disagree	24	26.1		
	Neutral	30	32.6		
	Agree	28	30.4		
	Strongly agree	6	6.5		

Statistical result management commitment towards occupational safety and health

Item	Level of agreement	Frequency	%	Mean	Std. Deviation
Management highly involved in occupational safety and health management planning, implementation & monitoring	Strongly Disagree	4	4.3	3.14	1.135
	Disagree	33	35.9		
	Neutral	9	9.8		
	Agree	38	41.3		
	Strongly agree	8	8.7		
Management allocates sufficient financial & non-financial resources to maintain OSH	Strongly Disagree	2	2.2	3.09	1.145
	Disagree	41	44.		

Item	Level of agreement	Frequency	%	Mean	Std. Deviation
			6		
	Neutral	5	5.4		
	Agree	35	38.0		
	Strongly agree	9	9.8		
PPE properly provided to all construction workers	Strongly Disagree	7	7.6	2.90	1.241
	Disagree	43	46.7		
	Neutral	5	5.4		
	Agree	26	28.3		
	Strongly agree	11	12.0		
Management encourages discussion on safety between the workers & the management	Strongly Disagree	7	7.6	2.99	1.218
	Disagree	37	40.2		
	Neutral	8	8.7		
	Agree	30	32.6		
	Strongly agree	10	10.9		
Management committed to integrating productivity, safety & Quality	Strongly Disagree	4	4.3	3.20	1.112
	Disagree	28	30.4		
	Neutral	15	16.3		
	Agree	36	39.1		
	Strongly agree	9	9.8		
The company prepared safe operating	Strongly Disagree	6	6.5		

Item	Level of agreement	Frequency	%	Mean	Std. Deviation
procedures or specific safety instructions relevant to its operations	Disagree	23	25.0	3.21	1.105
	Neutral	13	14.1		
	Agree	41	44.6		
	Strongly agree	9	9.8		
Supervisors and co-workers encourage safe working behaviors	Strongly Disagree	7	7.6	2.98	1.158
	Disagree	35	38.0		
	Neutral	9	9.8		
	Agree	35	38.0		
	Strongly agree	6	6.5		
There is a first aid kit on site that contains sufficient materials	Strongly Disagree	3	3.3	3.36	1.201
	Disagree	31	33.7		
	Neutral	3	3.3		
	Agree	40	43.5		
	Strongly agree	15	16.3		
There is a person on duty to give a first aid service on site	Strongly Disagree	4	4.3	3.82	1.167
	Disagree	15	16.3		
	Neutral	3	3.3		
	Agree	42	45.7		
	Strongly agree	28	30.4		
There is a documented incident investigation procedures	Strongly Disagree	5	5.4	3.51	1.084
	Disagree	14	15.2		
	Neutral	15	16.3		
	Agree	45	48.9		

Item	Level of agreement	Frequency	%	Mean	Std. Deviation
	Strongly agree	13	14.1		
Sometimes the workers ignore safety rules or policies in order to carry out an assignment to meet the schedule	Strongly Disagree	5	5.4	3.66	1.132
	Disagree	15	16.3		
	Neutral	4	4.3		
	Agree	50	54.3		
	Strongly agree	18	19.6		

Statistical result on Employee involvement towards OSH

Item	Degree of agreement	Freq.	%	Mean	Std. Deviation
Employees participate in the making of the organization's safety & health policy	Strongly Disagree	7	7.6	2.90	1.139
	Disagree	37	40.2		
	Neutral	12	13.0		
	Agree	30	32.6		
	Strongly agree	6	6.5		
Employees are allowed to participate in OSHM training decision making	Strongly Disagree	3	3.3	3.25	1.135
	Disagree	30	32.6		
	Neutral	11	12.0		
	Agree	37	40.2		
	Strongly agree	11	12.0		
Safety training and orientation are given for all employees at the beginning and periodically	Strongly Disagree	5	5.4	3.27	1.130
	Disagree	24	26.1		
	Neutral	14	15.2		
	Agree	39	42.4		
	Strongly agree	10	10.9		
Employees do participate in hazard prevention, control & evaluation activities	Strongly Disagree	4	4.3	3.36	1.095
	Disagree	22	23.9		
	Neutral	13	14.1		
	Agree	43	46.7		
	Strongly agree	10	10.9		

Statistical result on Health and safety work place inspection

Item	Degree of agreement	Frequency	Percentage	Mean	Std. Deviation
There are regular health and safety inspections at worksites undertaken	Strongly Disagree	6	6.5	3.26	1.137
	Disagree	23	25.0		
	Neutral	13	14.1		
	Agree	41	44.6		
	Strongly agree	9	9.8		
Standard workplace inspection checklists are used to conduct health and safety inspection	Strongly Disagree	7	7.6	2.90	1.120
	Disagree	35	38.0		
	Neutral	16	17.4		
	Agree	28	30.4		
	Strongly agree	6	6.5		
There is a procedure by which employees can report hazards at workplaces	Strongly Disagree	5	5.4	3.20	1.051
	Disagree	24	26.1		
	Neutral	15	16.3		
	Agree	44	47.8		
	Strongly agree	4	4.3		
The organization conducts internal OSH inspection and audit on a regular basis	Strongly Disagree	8	8.7	2.90	1.110
	Disagree	32	34.8		
	Neutral	18	19.6		
	Agree	29	31.5		
	Strongly agree	5	5.4		
The machines on site (Cranes, excavators, etc)are inspected by professionals periodically	Strongly Disagree	2	2.2	3.66	.929
	Disagree	11	12.0		
	Neutral	15	16.3		
	Agree	52	56.5		
	Strongly agree	12	13.0		
Occupational safety management system inspection processes are implemented well with the assistance of OSH experts	Strongly Disagree	4	4.3	3.51	1.084
	Disagree	18	19.6		
	Neutral	9	9.8		
	Agree	49	53.3		
	Strongly agree	12	13.0		

Statistical result on OSHMS Performance monitoring

Variable	Degree of agreement	Frequency	Percentage	Mean	Std. Deviation
There is a system for recording and analyzing health and safety performance statistics	Strongly Disagree	7	7.6	2.92	1.160
	Disagree	36	39.1		
	Neutral	14	15.2		
	Agree	27	29.3		
	Strongly agree	8	8.7		
Employees are regularly provided	Strongly Disagree	7	7.6		

Variable	Degree of agreement	Frequency	Percentage	Mean	Std. Deviation
with information on company health and safety performance	Disagree	50	54.3	2.67	1.101
	Neutral	5	5.4		
	Agree	26	28.3		
	Strongly agree	4	4.3		
There is a regular evaluation of safety and health effort	Strongly Disagree	5	5.4	3.45	1.113
	Disagree	19	20.7		
	Neutral	9	9.8		
	Agree	48	52.2		
	Strongly agree	11	12.0		