



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**ASSESSMENT OF HEALTH AND SAFETY PERFORMANCE AND CHALLENGES AT
THE BUTT AND CUTT LINE CONSTRUCTION PROJECT OF JAPAN TOBACCO
INTERNATIONAL ETHIOPIA**

**A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, THE SCHOOL OF GRADUATE
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OF MASTER OF PROJECT MANAGEMENT**

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DECLARATION

I, the undersigned, declare that the thesis titled "Assessment of health and safety performance and challenges at the Butt and Cutt Line construction project of Japan Tobacco International Ethiopia" is my original work and has not been submitted for the award of any other degree other than the Master Degree in Project Management for St. Mary University. I conducted the study independently, with the research advisor's guidance and comments. Other similar titles of any other university or institution with relevant sources of material used for the study have been appropriately acknowledged and noted in this study.

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ENDORSEMENT

This is to certify that Yonatan Wondemagegnehu carried out his thesis on “Assessment of health and safety performance and challenges at the Butt and Cutt Line construction project of Japan Tobacco International Ethiopia” and submitted in partial fulfillment of the requirements for the award of the degree of Master of Art in Project Management at St. Marry University with my approval as his advisor.



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Muluadam Alemu (PhD) – Advisor

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LIST OF ACRONYMS

CSFs:	Critical Success factors
EU:	European Union
HSE:	Health and Safety Executives
ILO:	International Labor Organization
PPE:	Personal Protective Equipment
PMBOK	Project Management Body of Knowledge
PM	Project Manager
WHO:	World Health Organization
GDP:	Gross Domestic Product
OSHA:	Occupational Safety and Health Administration

ABSTRACT

The construction industry is a significant component of many countries' economies and is frequently regarded as a driver of economic growth, particularly in developing countries. Construction work employs a diverse range of skilled, semi-skilled, and unskilled individuals due to its relatively labor-intensive nature. Despite its importance, the construction industry is regarded as hazardous, with frequent and high accident rates, as well as health issues affecting workers, practitioners, and end users. However, there is a lack of understanding in Ethiopia about how health and safety risks are managed on construction sites. As a result, the goal of this study is to learn about the current state of health and safety management in a Hawassa-based construction firm. A quantitative research method was used in the study. Project data was gathered. A quantitative research method was used in the study. Data was gathered from members of the project management team, site engineers, safety officers, and casual and contracted workers. The information was presented in charts and tables, and it was analyzed with descriptive statistical tools like frequency and percentages. Working at height, falls and trips, and tools and machinery were found to be the leading causes of incidents.

The study also discovered that while health and safety management on the construction site is adequate, there is still much room for improvement. The major issues and challenges confronting the construction sector's health and safety performance are a lack of enforcement of existing rules and regulations, resistance to change, particularly among supervisors, a lack of employee involvement, and a lack of authority follow-up. According to the major findings, the country's construction health and safety rules, as well as regulation by health and safety and local authorities, should be strengthened. Creating a workplace safety culture would also be critical, given that Ethiopia is new to the concept.

Key words: Construction projects, health and safety hazards, risk management, health and safety management, health and safety management challenges, health and safety training.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The construction industry has a critical impact on global economic development. While infrastructures such as roads, bridges, tunnels, and dams significantly improve living standards, building towers address the issue of growing urban populations. The construction industry contributes significantly to the gross domestic product of many countries (GDP). In 2012, global construction spending was around \$4 trillion. By 2025, this spending is expected to total \$9 trillion (Oxford Economics, 2015). Today, construction spending exceeds \$11 trillion per year, accounting for approximately 13% of global GDP (Sick, 2020).

Although the construction industry promotes economic development and provides numerous non-monetary benefits to many countries, it remains one of the most dangerous industries, with many occupational hazards on construction sites that result in numerous deaths (Zhou *et al.*, 2015). (Li & Poon, 2011). The Ministry of Housing and Urban Rural Development of the People's Republic of China (MOHURD) reported 734 construction safety accidents and 840 deaths in China in 2018 (Ministry of Housing and Urban Rural Development of the People's Republic of China, 2019).

In reality, no one truly knows the total costs of work-related accidents or diseases because, in addition to the more obvious direct costs, there are a slew of indirect costs that are impossible to quantify. Investing in workplace safety will significantly reduce occupational injuries. Accidents and diseases will also help save lives and money by reducing employee absenteeism. Because workplace health and safety regulations are so important, it relies on its position to reduce occupational accidents and diseases. Employers and employees must collaborate to ensure a self-generating endeavor, which includes both those who create hazards and those who work with them. In recent years, in many firms, workplace health and safety has been a key concern resulting in people's death or suffering.

Safety management is essential knowledge in a project management area which recognized in the guide to the project management body of knowledge (PMP, cited by Crete al. 2011).

Construction productivity is regarded as one of the most aggressive for workers. The figures for Spain's accident rate go beyond statistics and have become a real social concern.

Although most accidents occur in small businesses, with the greatest impact in medium businesses, major construction companies employ the greatest number of laborers, skilled and temporary workers, and thus have the highest accident and accidentality rate, with serious human, social, and family consequences (Duran López *et al.*, 2007). Many studies, such as Coble and Haupt (1999) have shown that construction industry reflects the level of economic development within the country. The construction sector everywhere faces problems and challenges. However, in developing countries, these difficulties and challenges are present alongside a general level of socio-economic stress and a lower productivity rate when compared to developed countries (Ofori, 2000). Nevertheless, it is generally believed that the industry is a good source of employment at various levels of skills, from a general labor to semi-skilled, skilled and specialist workforce.

Globally, construction is one of the most hazardous industry sectors with many thousands of workers being killed and seriously injured each year. Worldwide occupational injury rates in construction is highest for all major industries (Lehtola *et al.*, 2008). Construction is always risky because of outdoor operations, work-at height, complicated on-site plant machinery and equipment operation coupled with worker's attitudes and behaviors towards safety (Choudhry and Fang, 2007). Construction hazards are generally classified in to four distinct categories which include job site conditions (nature and physical layout); equipment and materials; human; and management

factors (Pipitsupaphol & Watanabe, 2000). The importance of the human element is highlighted by the role of errors and omissions in catastrophic system failures and occupational accidents (Lingard & Rowlinson, 2005). Health and safety risks are needed to identify, assess, and take certain action to eliminate or minimize the probability of occurrence. In order to reduce the accident or incident level and subsequently cut losses, it is important to ensure that safe working practice is being observed (Radhlinah, 2000).

Despite substantial efforts to improve safety on the construction sites, in Denmark, 5.296 accidents had been still reported in the construction sector in the year of 2017, out of this number, 1.100 accidents were reported as serious that resulted in a total of 4 deaths. (Dagensbyggeri, 2018) Likewise, similar patterns have been reported in many other countries around the world.

(Pandit *et al.*, 2019) The construction accidents related to the H&S outcomes result in extra costs on the industry (Pearce, 2003), productivity losses, and unpleasant emotional and psychological distress caused to the construction workers, families, and co-workers of these affected workers (Yuan *et al.*, 2018), (Waehrer *et al.*, 2007), (Zou and Sunindijo, 2015), as well delays in the construction completion and even reputational harm of the contractors. (Wang *et al.*, 2006) Therefore, there is a demand for mastering how these injuries and deaths can be minimized by the use of simple methods like communication of safety rules among construction crew and better and effective training of the staff. (Pandit *et al.*, 2019)

This has an impact on both individuals and the companies they work in. These instances in the workplace put a strain on the organizations and employee's ability to advance, resulting in a drop in output and efficiency. Safe and a healthy working environment not only help to raise population in an inclusive manner, but they also instill confidence in both workers and the organization. Occupational health and safety is the process of ensuring that employees are safe and healthy at work in order to maximize their productivity. For companies, labor unions, society, and the government, the workplace has become a vital aspect of any business's viability (Waehrer *et al.*, 2007).

Employee motivation and performance are influenced by the quality of the work environment. Employee engagement with the organization, particularly their immediate environment, has a significant impact on their error rate, level of innovation, collaboration with coworkers, absenteeism, and, ultimately, the number of years they stay on the job. Organizations establish health and safety standards with the goal of promoting and maintaining the best level of physical, mental, and social well-being for workers in all industries that affect employee health (Pearce, 2003).

Safety hazards are those features of the workplace that have the potential to cause immediate and violent injury to an employee, whereas health hazards gradually and cumulatively deteriorate an individual's health. In today's globalized world, developing countries like Ethiopia have a competitive advantage in terms of labor costs. As most businesses strive to maximize efficiency from their personnel and equipment, labor cost has become a significant concern in product and service development (Zou and Sunindijo, 2015).

Workplace health and safety brings up the issue of financial expenditures. Occupational health and safety have a double-edged economic cost to the firm. On the one hand, health and safety policies that protect employees from workplace dangers may conflict with management's goal of lowering production costs. Effective health and safety policies, on the other hand, can improve employee and organizational performance by lowering costs associated with accidents, disabilities, absenteeism, illness, insurance cost, replacement and a wage cost for human resource manager personnel time spent recruiting, selecting, and training new employees, and, in less common cases, the cost associated with lost revenue on orders cancelled or lost (Zou and Sunindijo, 2015). Overall, the expenses of most work-related accidents or illnesses are extremely significant for workers, their families, and employers

The projected expenses of occupational accidents and diseases on a national scale can be as high as three to four percent of a country's gross domestic product. As a result, it is critical for businesses to take every employee's complaint seriously and to guarantee that they are safe and healthy. A healthy and safe work environment can help firms save money and increase the company's efficiency (Wang et al., 2006). If work-related illnesses and accidents can be accounted for on the balance sheet, the company may devote the same level of management effort and innovation to developing and maintaining a healthy and safe workplace as they do to other aspects of the business. Therefore, in this study, I assessed the health and safety performance and challenges at the Butt and Cutt Line construction project of Japan Tobacco International Ethiopia.

1.2 Statement of the Problem

Every year, the construction sector is responsible for many occupational injuries and fatalities. Each year, approximately 5,500 persons in the European Union states die because of work-related accidents. More than 75,000 people are so crippled that they are unable to work (Saidani & 2013). Accidents and ill-health at work are increasingly recognized as having an impact not only on the lives of individual workers, their families, and their future employment prospects, but also on the productivity and profitability of their businesses, and ultimately the welfare of the society in which they live. In short, workplace safety and health are good business, and upholding acceptable standards is an important part of societal growth, poverty reduction, and decent employment (Turk, 2011). Adane, *et al.* (2013) argued that developing countries like Ethiopia are striving hard to improve their basic services by building schools, hospitals, housing complexes,

shops, offices, highways, power plants, industries, bridges and other infrastructures which are carried out by unskilled labor forces due to this fact occupational injuries and accidents among these workers are high due to illiteracy, poverty, lack of health and safety training and information on health hazards and risks at the work place. In this regard, Mbuya and Lema, (2002) pinpoint that in most developing countries, health and safety consideration in construction project delivery is not given priority and employment of safety measures during construction is considered a burden.

A number of studies, including (Glendon & Litherl, 2001; Kheni, 2008; Zeru, 2014), have looked into construction health and safety in developed countries. In the majority of these studies, researchers either created a new framework model or replicated an existing one in order to improve its adequacy. However, there is a scarcity of research in this area for developing countries with specific needs. Despite the fact that much research has been conducted on health and safety, very little has been done on Ethiopia and the specific characteristics of health and safety management performance in their environment.

The current situation of the Ethiopian construction industry is marked by low performance in terms of health and safety management (Adane, *et al.*, 2013). Although some construction companies are attempting to implement a health and safety management strategy and comply with mandatory regulations, simply adhering to these regulations may not be enough to ensure excellence in health and safety performance because they only cover the most basic measures. As a result, the purpose of this study is to explore the performance of health and safety at the construction project and to see how important it is to integrate and improve health and safety standards into construction project management.

1.3 Objective

1.3.1 General Objective

To assess health and safety performance and challenges at the Butt and Cutt Line construction project of Japan Tobacco International Ethiopia.

1.3.2 Specific Objectives

1. To examine health and safety policy implementation.
2. To observe management commitment on health and safety.
2. To explore challenges of health and safety performance at the construction project.
3. To identify employer and employee non-compliance to health and safety.

1.4 Research Questions

1. Are health and safety policies properly implemented?
2. Is management-shown commitment on health and safety?
2. What are the most significant challenges hindering health and safety performance at the construction project?
3. What are the major non-compliances on health and safety?

1.5 Significance of the study

The main reasons for the importance of health and safety include humanitarian concerns, economic and legal considerations. As a result, injuries, illnesses, or losses caused by construction accidents are frequently costly in both financial and human terms. Health and safety is concerned with lowering injury and illness rates, as well as removing workplace dangers, in order to save money and human life. Thus, the most important aspect of improving safety and health in the construction business is to prevent accidents, which may be accomplished by raising awareness among all relevant parties and identifying areas of health and safety weaknesses in the industry. Identifying the elements affecting construction safety and health performance is advantageous to construction companies. This assists construction businesses in making the necessary preparations to prevent these issues from occurring and to be aware of them when they do occur during the

project's lifecycle. This boosts the company's overall performance as well as its safety and health record. As a result, it is a well-known method of increasing employee morale and productivity, which improves the company's image. The construction industry, as well as other businesses in general, will gain from this research. The government may use the findings of this study to develop policies on workplace health and safety. Both public and private sector management will benefit from finding appropriate approaches for improving and maintaining workplace health and safety standards. It also will be relevant for multinational companies currently in Ethiopia or planning to invest in the country to have an overall understanding of performance levels and challenges with proposed solution in health and safety management.

1.7 Definition of key terms

The field of risk management is faced with difficulties in defining and agreeing on principles. Risks are dealt with differently across different countries, industries and sectors and fields. Terms, definitions, and interpretations are as varied because the number of sources providing them. There aren't any agreed unified definitions of risk, risk analysis, assessment, and management. There are often misconceptions. Different terms, for instance —risk analysis and —risk assessment, are often used interchangeably (Lingard and Rowlinson, 2005).

Health

Health is that the general condition of an individual in mind, body and spirit, usually aiming to be free from illness, injury or pain. the globe Health Organization (WHO) defined health in its broader sense in 1946 as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (WHO, 2006). In this study health means being free from illness, injury or pain which can be caused by construction activities.

Safety

Safety is said to external threats, and therefore the perception of being sheltered from threats. consistent with the business Dictionary, safety is defined as a relative freedom from danger, risk, or threat of harm, injury, or loss of personnel and/or property, whether caused deliberately or accidentally. Safety can even be defined because the control of recognized hazards to realize an

appropriate level of risk. In this study, safety means freedom from danger, harm, and injury to the person involved in construction activities.

Hazards

A hazard is that the potential for harm. In practical terms, a hazard is commonly related to a condition or activity that, if left uncontrolled, may result in an injury or illness. It also defines as any source of potential damage, harm or adverse health effects on something or someone under certain conditions at work. Basically, a hazard can cause harm or adverse effects (to individuals as health effects or to organizations as loss of property or equipment). In the context of this study hazard means anything which has the potential to cause harm to people on construction sites.

Risk

Risk has been traditionally defined as a measure of the probability and severity of adverse effects(Haimes, 2009). Rowel (1982) provides that risk is said to hazard whereby risk becomes the hazard level (hazard severity) combined with the likelihood of the hazard resulting in hazard consequence. Valsamak is et al (2004) define risk as a variation in actual outcome from the expected one, which implies the presence of uncertainty. the overall concept of all definitions of risk provides that risk may be a danger of unwanted and unfortunate events. In the context of this study risk may be a probability of occurrence (likelihood) of an occurrence and the magnitude of its consequence(Kaplan and Garrick, 1981; Mondarres et al 1999).

Risk= (S, P, C): where

S= Scenario resulting in hazard

P= Probability of occurrence

C= Consequence (severity)

Accident and Injury

The terms accident and injury talk to separate phenomena, mutually interrelated as cause and effect(exposure and outcome). The terms accident and injury are Hereby utilized in accordance with the definition adopted at the primary World Conference on Accident and Injury Prevention (WHO, 1989); that is, an accident is an unintentional event which ends up or could end in an injury, whereas injury may be a collective term for health Outcomes from traumatic events. Rejda

(1992) defined an accident as a sudden, unforeseen and unintentional" event, which can lead to physical harm to someone and/or damage to a property. the employment of the term accident during this thesis relies on an incident which cause physical harm or damage to the body resulting from an exchange, usually acute, of mechanical, chemical, thermal, or other environmental energy that exceeds the body's tolerance. An incident which has the potential to wreck property isn't considered during this thesis.

Risk Assessment

The Health and Safety Executive (HSE), (1998) defined risk assessment as a process that identifies the hazards related to activities/tasks, evaluates the results of expose to those hazards and implements the measure needed to regulate the danger of injury/ill health to as low A level as possible. In addition, risk assessment has been defined as a structured process that identifies both the likelihood, and extent, of adverse consequences Arising from a given activity, facility or system (Kaplan and Garrick, 1981; Gillett, 1998).The assessment of risks informs risk control decisions, the implementation of which is Monitored and reviewed to confirm that risk is controlled and remains within tolerable limits (Lingard and Rowlinson, 2005). Assessing risks allows someone to prioritize the action to be taken to manage them. Inother words, risk assessment is about deciding who may well be harmed so judging how likely it's something goes wrong, and the way serious the results might be (Mondarres et al, 1999) In the context of this studyrisk assessment is that the process that identifies the hazards related to Particular activities/tasks on construction sites, evaluates the results and estimate hazard of exposure to those hazards.

Risk Communication

Risk communication is an interactive process of exchange of data and opinions among individuals, groups, and institutions, often involving multiple messages about the character of the chance or expressing concern, opinions, or reactions to risk messages or to the legal and institutional arrangements for risk management.

Risk Control

Risk control may be a technique that utilizes findings from risk assessments identifying potential risk factors in a firm's operations, like technical and non-technical aspects of the business, financial policies, and other policies that will impact the well-being of the firm, and implementing changes to cut back risk in these areas.

Health and Safety Information

A worker who has gotten any quite information in-one-year period through any reasonably media about health and safety of construction workers Health and Safety Training: Trainings given to a worker about health and safety to construction workers.

Personal Protective Equipment (PPE)

Utilization of the worker-specialized clothing or equipment worn by employees for defense against health and safety hazards at the time of interview.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter deals with different literatures' that were published around the world that gives the theories used for this analysis. Most of the literatures' mentioned here are square measures conducted indifferent countries and helps to establish the fact within the construction industry including loads of activities and participants, and to grasp the method and also the interacting components in construction safety.

2.2 Theoretical Review

2.2.1 Definitions of Safety

Occupational health and safety is a section involved with the event, promotion, and maintenance of the work surroundings, policies and programs that make sure the mental, physical, and emotional well-being of staff, moreover, as keeping the work surroundings relatively free from actual or potential hazards that would injure staff (Nyirenda , Chinniah, Agard (2015)). Occupational health and safety is a discipline managing the concerns of injuries and diseases and also the protection and promotion of the health of employees as it aims at the development of operating condition and the environment.

Occupational health and safety in construction is mostly described as the science of the anticipation, recognition, analysis, and management of hazards arising in or from the work that could impair the health and well-being of employees, taking into consideration the impact on the surrounding communities and environment.

Safety is mainly about the reality of being free from danger or risk or to involve safety precaution or safety measures from certain work order (Dictionary of human resource and personnel management 2003)(Mwombeki, 2005). Safety is the state of being protected against any sort of events (accidents) that might be thought of non-desirable by controlling hazards that will bring a relative level of risk.

Also, accident can be described as some unanticipated and surprising event happening that causes injury, damages, or death. (Mwombeki, 2005)Anton (1989) outlined a construction safety

program as “the management of the operating surroundings, equipment, processes, and the employees for the aim of reducing accidental injuries and losses to the work being done.

2.2.2 Construction Safety in Ethiopia

The construction sector is one of the major contributors to the Ethiopian economy and it's one among the fastest-growing sectors. Adane MM, Gelaye , Beyera , Sharma , Yalew (2013)said that developing countries like Ethiopia are working exhaustively to enhance their basic services by building colleges, hospitals, housing complexes, shops, offices, highways, power plants, industries, bridges, and alternative infrastructures. However, these construction activities are being carried out by unskilled labor forces at low-cost rate causing injuries and accidents among these workers. As the obvious states of illiteracy, poverty, lack of health, safety coaching and data on health hazards and risks at the workplace persist. Such employees are best-known to face quickly dynamic workplaces and a high degree of competition.

As one of the rising sectors in Ethiopian economy, the wellbeing and security of employees throughout the country shall be given the attention it required. In spite of the increasing rate of investment within over the pastdecade, solely few studies are conducted to analyze the status and performance of health and safety within the industry (Hanna Mersha, Seid Tiku Mereta &Lamessa Dube, 2016).

Therefore, in developing countries, health and safety hazards paced by construction employees are bigger than those in industrial countries. The impact is additionally ten to twenty times higher in these counties, wherever the best concentration of the world's employees is located (Dong, 2005). The poor safety practices among construction employees in many of the African countries is apparent owing to the unsafe conditions like not having accident prying, lacking methodology of warning employees of associate degrees of existing hazards and, dangerous and unchecked procedure in, on or around machines or equipment's as for example equipment operators shouldn't move instrumentation while not creating eye contact with employees within the vicinity, not having well trained and intimate flaggers that ought to keep enough distance from alternative main road employees to make sure they will be distinguished by passing motorists. Flaggers should additionally not use smart sight communication or two-way radios to speak with fellow flaggers, lean lightweight in operating night shifts, lack of personal protecting equipment's and inadequate coaching of employees. Additionally, unsafe operating environments are the main

reason for most workplace injuries, individual connected factors like young age, lack of formal education, lack of expertise, job discontent, lack of concentration, extended operating hours, night work and non-use of personal protecting equipment are essential factors (Wong, 1994; Huang and Chen, 2002; Chau et al., 2004; Bresciani et al., 2012, Dong et al., 2015). Three-fifth of construction employees don't seem to be certain whether they should wear protecting equipment on the construction sites. They felt that it's inconvenient and uncomfortable for them to work wearing that personal protecting equipment (Griffin & Neal, 2000).

2.3 Empirical Review

2.3.1 Factors affecting Safety in Developing Countries

Safety in developing countries especially is on very low levels chiefly because of the lack of adequate regulations and means of enforcing them. In developing countries, safety rules hardly exist and may of ten not work suitably and effectively. This drawback is mostly because of the lack of effectiveness of the authority in implementing safety rules and programs (Hinze, 1997). Some research findings from developing countries additionally apply to Ethiopian construction sites. Kartam *et al.* (2000) have determined, at Kuwaiti construction sites, that the issues arise because of disorganized labor, poor accident record-keeping and coverage systems, intensive use of unskilled laborers, a scarcity of safety laws and legislation, the low priority given to safety, the smallsize of most construction corporations, and competitive tendering. Tam *et al.* (2004) conclude from their research of Chinese construction firms that the most factors poignant to safety performance include management's poor safety awareness, lack of coaching, project managers' poor safety awareness, reluctance to input resources for safety, and reckless operations. One study in Taiwan(Cheng *et al.*,2010) additionally discovered issues that enclosed not valuing the importance of safety measures enforced at workplaces, not giving enough safety education to new employees, and not hiring well-trained safety personnel to implement safety measures.

2.3.2 Management commitment

It is evident that management plays a very necessary role in an economical and effective safety program. Management should absolutely and actively translate concepts into safety actions, including issuing a written comprehensive safety policy, allocating decent resources, promptly reacting to safety suggestions and complaints, attending regular safety conferences and coaching,

regularly visiting the work, following constant safety rules as others, etc. Top management commitment to safety ought to be consistent for a productive safety program.

2.3.3 Clear and economical Objectives

Safety programs will accomplish the required results once safety goals are clearly established. The goals ought to provide a clear image, direction and focus for playacting day-to-day activities to succeed in desired results. Once realistic and possible goals are stated, the progress towards accomplishing such goals will be simply measured.

2.3.4 Personal perspective equipment

Attitude could be a tendency to reply completely and/or negatively to ensure persons, objects or situations and is often engineered up through expertise. People, however, dissent in their perception of risks and disposition to bring risks. Productive safety programs will be achieved if the positive attitudes of workers toward safety area units are strengthened.

Employee perspective is a very helpful tool of safety measure creating a lot of highly integrated protection perspectives that will give employees a lot of probability to persevere in safer environments thus unsafe behavior would decrease (Schroder, 1970).

2.3.5 Teamwork

A safety program succeeds once all involved parties from top to bottom hierarchical levels realize that preventing accidents is everyone's responsibility. Each unit should cooperate in achieving the goals set by the team coming up with ways of handling regular safety issues. Conjointly, safety ought to be seen as collective effort which requires cooperation from everybody concerned.

2.3.6 Economical social control System

Efficient social control theme ought to be developed and enforced by top management to ensure staff follow the protection rules and regulations.

2.3.7 Safety coaching

A productive safety program will be achieved if all workers are given periodic academic and training programs to enhance their skills on safety at work. These training sessions will be

conducted through numerous techniques like employee orientation, safety induction, toolbox talks, or communication programs. It should embody topics like employee right and responsibilities, falls from height prevention, confined spaces, personal protecting equipment, first aid and emergency procedures, equipment coaching on savvy to maneuver around instruments and take all precautions for their own safety and others, improve visibility on vehicle and a good assortment of alternative topics, whether to be bestowed updated data or simply to be provided as a refresher on a theme, (Hinze & Gambatese, 2003).

2.3.8 Appropriate management

A sound safety program needs employers to produce decent management in protecting workers from work hazards. Productive management needs competent personal to assign work in line with the workers' ability, appraise staff after they do jobs safely, communicate by listening and speaking, set an honest example by following constant safety rules and proper arising safety issues.

2.4 Preventive and protecting Measures

The occurrence of accidents and work-related injuries in most sectors continues to be disappointingly high; there's thus a pressing necessity for preventive and protecting measures to be instituted at the workplaces to ensure the protection of staff. Accidents not solely cause pain, suffering or death to victims, however, conjointly threaten the lives of alternative workers and their dependents. Accidents conjointly result in:

- Loss of live or physical disability.
- Material loss, i.e., harm to machinery and instruments well as spoiled products; and
- High operational prices through treatment, payment of compensation, repairing or replacing broken machinery and instruments.

Workplace safety programs ought to aim at eliminating the unsafe operating conditions and dangerous acts that account for nearly all activity accidents and diseases. By eliminating or reducing the sources of potential risks and therefore the causes that trigger hazards will be achieved in a very variety of ways: engineering management, style of safe work systems to reduce risks, body, or structure strategies, and use of private protecting instrumentality.

2.4.1 Engineering Control

Engineering control involves controlling the hazard at the source. These can be done by:

- Separate Workers from Traffic – be sure to separate workers from traffic as much as possible, although some workers will need to be flagging traffic in the road. Flaggers should know never to turn their backs to oncoming traffic.
- Establish Safe Traffic Flow – To ensure that workers and vehicles move around the work site safely, it's vital to establish where workers can enter and leave the site. There should also be procedures for when construction equipment is backing up and where it could encounter workers.
- Improve Visibility- It's important to ensure as much visibility as possible for workers. If visibility is low, use spotters to look out for potential hazards. Use of reflective uniforms also helps improve visibility. Additional work lighting may be necessary in addition to reflective tape on equipment.
- Use Proper Safety Barriers – While light traffic might call for orange safety cones, heavy traffic may require barrels, or even temporary concrete barriers.
- Ensure that Employees are Attentive around Moving Equipment – It's important that employees never stand in front of or behind an operating vehicle since equipment can often block an operator's field of vision.
- Make Sure Employees Wear Personal Protective Gear – Construction workers should always wear appropriate protective gear such as hard hats, reflective clothing, and steel toed shoes.

2.4.2 Administrative or Organizational Controls

In supervising or managing a highway construction project, consider the following tips on how to keep highway workers safe with administrative controls

- Complete a Risk Assessment – A risk assessment, based on policy, regulations and standards in the country and OSHA will help identify the risks workers face. The plan should outline what measures are needed to eliminate or mitigate those risks.
- Train Workers on a Safe Work Zone – Be sure to train workers on how to set up and maintain a safe work zone. Anyone flagging traffic should know to follow the safest

practices. When it comes to traffic control, it's important to warn employee's and motorist traffic zones far in advance.

- **Require Equipment Training** – Be sure that employees know how to maneuver around equipment and take all precautions for their own safety and that of others.
- **Encourage Responsibility** – Encourage employees to take some time to walk around the site and check for hazards.

2.4.3 Personal Protective Equipment (PPE)

OSHA regulates employers to provide construction employees with proper personal protective equipment (PPE), used to supplement administrative and engineering safety controls. OSHA standards provide criteria for personal protective equipment, including protection for the head, feet, eyes, face, hearing, and respiration. It could be the last defense between a worker and a possible injury.

However, many injuries occur not because employees don't have protective gear but because they choose not to wear it. This means that employers not only need to provide the PPE but must require employees to always use it.

There are two categories of PPE. The first categories are safety helmet; safety shoes; and appropriate clothing. The second category depending on kind of work, like eye protection, protective gloves, ear protectors, and the safety harness, (Jannadi & Bu-Khamsin, 2002).It is common in the construction industry that PPE means safety of workers. However, safety is all about how to create the appropriate environment in the workplace that PPE only to be considered as extra protections for the worst scenario might occur.

PPE should be regarded as a last resort when considering control measures. Other methods should be considered and used that will reduce or eliminate risk to injury. However, where PPE is the only effective means of controlling the risks of injury then employers must ensure that PPE is available. PPE should be worn at all construction sites. A typical construction site may require workers to wear a hard hat, coveralls, safety footwear, gloves, eye protection and high visibility vest. These must be provided to all employees.

- **Head Protection** – Hard hats protect against impacts from fixed and falling objects. Some hard hats may come equipped with face shields or earmuffs. Helmets should fit properly

and never be altered. They should also be replaced after any heavy blow. Be sure to inspect them periodically for cracks or deterioration.

- Eye and Face Protection – Hard hats don't protect the face, which makes safety goggles or face shields very important. When it comes to cutting, grinding, welding, or nailing, eye protection is essential. They should also be worn when working with concrete or harmful chemicals, or when exposed to electrical hazards. Goggles might be tinted, and some offer side shields.
- Foot Protection – Steel-toed boots prevent toes from being crushed due to falling objects. Construction workers should also wear slip-resistant, puncture-resistant soles.
- Respiratory Protection– When employees work in quarry and crusher sites, asphalt plant respiratory protection is vital. Respiratory protection can protect chemical and even dust. Respirators must also be cleaned to remain effective.
- Hearing Protection–Be sure to use earplugs or earmuffs in work areas with high noise levels like crusher site.
- Hand Protection–Workers need heavy-duty rubber gloves for concrete work and at asphalt plants.
- High-Visibility Clothing–When visibility may be impaired, reflective clothing is necessary.

2.4.4 First-Aid Arrangements

First-aid is a provision of primary care for an injury as it is regularly carried out by trained first aider to an injured person until definitive medical treatment can be reached if required. It is essential for each construction site to have the appropriate first aid arrangements. However, these arrangements would not eliminate the hazards but only to reduce the potential risk on the injured person which might be exposed.

2.5 Causes of Construction Accidents

Due to the high number of accidents that occur in construction and the consequences of it for workers, organizations, society and countries, occupational safety has become a very important issue for stakeholders to take care of the human resource. Causes of accidents can be attributed to

factors such as human error, unsafe behavior, and the interaction of humans with materials, tools, and environmental factors (Lehto & Salvendy, 1991).

Most of the accidents are caused by human error. The human error is considered as an undesirable human decision or action that reduces the effectiveness of safety or system performance. Examples are misuse of equipment and tools and misconduct of workers GIBB, (2005). Construction-project features, such as the project nature, method of construction, site restriction, project duration, procurement system, design complexity, level of construction, and subcontracting, contribute to accidents, and that the features' contribution is through the introduction of proximal accident causal factors in the construction process (Manu *et al.*, 2010).

There are two basic causes of workplace accidents.

- Unsafe condition and
- Unsafe acts

2.5.1 Unsafe Condition

Unsafe Conditions are the mechanical and physical conditions that cause accidents. These are main causes of accidents and include things like:

- Improper guarded areas
- Inappropriate personal protective equipment's
- Hazardous procedure in, on or around machines or equipment's
- Improper illumination –glare, insufficient light in working night shifts

We can reduce unsafe conditions by Engineering control, Administrative or Organizational Controls and using personal protective equipment's.

2.5.2 Unsafe Acts

Unsafe acts can even the best attempts to reduce unsafe conditions, but they are not easy answers to the question of what cause people to act recklessly. We can reduce unsafe acts by emphasize in top management commitment, emphasize on safety, establishing a safety policy, reduce unsafe acts through selection, providing safety training, using posters and other propaganda, using positive reinforcement, using behavior-based safety programs, encouraging worker participation and by conducting safety inspections regularly (Source).

2.6 Risk Management

A control is a component of a facility, together with any system, procedure, method or device that's intended to eliminate hazards, forestall risky incidents from occurring or cut back the severity of consequences of any incident that might occur (Lingard & Rowlinson, 2005). Control measures is also proactive, in this they eliminate, forestall or cut back the probability of incidents, or they'll be reactive, in that they cut back the results of incidents (Huges & Ferret, 2011) The data on management measures will be obtained from Codes of observe, business or trade associations, specialists, and other publications together with those of makers and suppliers. within the activity health and safety on text, risk management is categorized according to hierarchy, typically merely referred to as the —risk management hierarchy. This hierarchy helps individuals to make your mind up on which risk management to implement. Risk management choices at the highest of the hierarchy are most popular quite those at very cheap of the hierarchy. the well-liked choices are the foremost effective means that of dominant risks because of they're a lot of less dependent on individuals to try to one thing and they will defend a bigger variety of individuals. Therefore, management measures ought to be thought about and adopted within the order bestowed.

2.7 Costs of Accidents

Accidents value money-and therefore lead to less profit and low qualities Project outcome. Money lost because of accidents isn't like cash spent for material or wages. There's no come back on cash spent on accidents. Suppose however this cash is dissipated, everybody will see cash for medical expenses and for workmen's compensation (American Safety Council, , 1973). Though the amounts vary, in no case do any currencies absolutely compensate a worker for his lost time lost operating capacity and his suffering. Even if a corporation carries insurance to require care of losses, the corporate still eventually pays for them.

The larger a company injury expertise, the upper are the prices. Medical, compensation and insurance prices are necessary prices of doing business. Insurance premiums, however, don't pay the entire accident bill, what ought to be completed in this the hidden prices of accidents-those that don't seem to be covered by the insurance –can be beyond medical, compensation and insurance prices. Mostly accompany accident report shows solely a disabling Injury with tending

treatment and no lost time; however, reports to the instrumentality and loss of production time value many substantial quantities of cash. Generally, accident prices embrace

The following components:

- injury to plant and instrumentality
- Loss of productive time throughout accidents
- Reduced work rate till traditional web site operating rhythm and morale are improved
- Disruption of labor throughout investigation of the accident
- Legal value
- Increase in insurance premiums
- Loss of confidence and name
- Loss of experienced manpower
- value to be procured non-productive amount or operating below commonplace for harmed worker. In addition to indirect value imposing on the project, accidents additionally cause social problems:
 - If a permanent bodily impairment is concerned, the employee should digest it and no quantity of
 - personnel compensation can really offset the loss
 - Death and disabling injuries have an in coverable impact for the employee's family and the whole community.

These prices may be classified as either direct (insured) or indirect (uninsured):

Direct prices: are costs that embrace compensation, insurance premiums and in some cases, medical expenses. For example:

- Worker 's compensation
- Insurance provided hospital and treatment
- Substance payments, and
- Rehabilitation and alternative edges by law harmed employees and their families are the foremost direct value components

Indirect prices: these are costs, that are harder to determine; however, are calculable by nationalsafety council to concerning adequate (and sometimes higher than) the insured prices.

And these prices include the following:

- 1) Production losses that arise from partial or complete termination due to:
 - a) injury of materials, instrumentality, or production space
 - b) Emotional upset and lowered worker morale that tends to lower the assembly
 - c) raised tension leading to a rise of materials spoiled items rejected
 - d) Replacement employee(s) WHO turn out less whereas being trained to fill harmed worker's job
- 2) Time lost by supervisors due to:
 - a) helping harmed worker
 - b) work the accident
 - c) getting ready accident report
 - d) Hiring and coaching new employee(s)
 - e) Attending hearings conducted by the court
- 3) Time lost by co-workers of harmed employees:
 - a) In aiding harmed person(s)
 - b) thanks to curiosity
 - c) thanks to sympathy
- 4) alternative losses:
 - a) Loss of business thanks to late deliveries
 - b) Loss of goodwill and status
 - c) Grievances, value of impairment of employer-employee relationship

2.7.1 Accident and potency

All accidents cut back potency and effectiveness. They are, moreover, symptoms that one thing is wrong. because of accidents stem from lack of management over men, materials, Processes and surroundings, lack of management can inevitably trim down from an economical and Effective operation (American Safety Council, 1973).

A good production person likes to work on schedule. He/she needs to grasp that he/she has an available person to handle every job. He /she wish to grasp daily however shut every job is to completion. economical production demands effective designing. To accomplish this, the Manager desires to know what he/she goes to try and do next. He/she desires time for rising strategies and time for figuring out alternative tasks. An accident adversely affects the operation of a system. It should knock out one in all the most effective producers, or injury key

instrumentality. At the terribly least, it's certain to pull the supervisor removed from his/her regular responsibility-not solely to require care of the harmed person, however, additionally to rearrange for a temporary (and typically permanent) replacement. If instrumentality has been broken, repairs or replacement should be regular. So, alternative production or department could also be affected. Thus, the damaged instrumentality needs to be repaired or scrapped before adversely poignant the delivery dates. When any of those results occur, the supervisor realizes the importance of a good safety program. It is not simply an accident that causes bother; however, a series of very little accidents will keep a department or maybe a company in state of unskillfulness.

2.7.2 Accidents and Morale

A military general once outlined morale as —the belief by everybody that his regiment is that the Best within the army, that his company is that the best within the regiment, which he's the most effective in Regiment, which he's the best man within the company.(American Safety Council, 1973).No soldier, however, can feel that method if his leader makes frequent mistakes. Similarly, neither will an employee have feeling concerning his/her job if his department encompasses a high accident rate. A high injury rate depresses worker morale.

Unsafe plant conditions contribute to Accidents and result in lowered morale and poor job performance. a heavy accident makes everybody nervous, sometimes fearful. recurrent accidents build workers feel their Company doesn't care concerning them or feel that their supervisor isn't on high of his job. They Lose confidence and interest in doing their job well. an impressive safety record, on the opposite hand, contributes to real pride and enthusiasm, just like an impressive production record will. workers develop loyalty to their company and a way of employment security. smart morale is value quite cash within the bank.

2.7.3 Accidents and packaging

Building an honest name within the community is second solely to putting together an honest name among

employees. the complete community notices an honest safety record. a corporation gets to be called —a good place to figure. Management values this sort of name and thinks well of supervisor WHOhelps gain it. dangerous accidents too, are reportable to the community, and injury a corporation name(American Safety Council, 1973).Every worker, each activity, each

facility of a company contributes to the feeling that persons outside a corporation have that company.

These are true packaging. bar of accidents, therefore, should not be a sideline, followed when there's time or once it's convenient. Accident bar is a component of business-it pays off in smart public relations and image.

2.7.4 Accidents and premium

Even though premium rates for compensation insurance vary from country to country, the Basic criteria to line the speed rely on

- Accident incidence
- sort of work and
- Accident history

Based on some insurance policies, workmen's compensation insurance is sold-out on retrospective Bases under that the ultimate premium that the contractor pays is adjusted up or down in keeping with his accident expertise. once the retrospective rating arrange is employed, the Contractor pays his regular compensation premium rates throughout the lifespan of the policy.

Some amount once the expiration of the policy (usually one year), the insurance carrier evaluates the contractor's loss below the policy. The premium is then adjusted up or down relying on the contractor's expertise of loss thanks to accident. The contractor receiving a rebate if his loss is low and pays further if his accident loss is high however the most and minimum Premium is ready in the policy. supported this policy, the premium is directly proportional to accident (SOURCE).

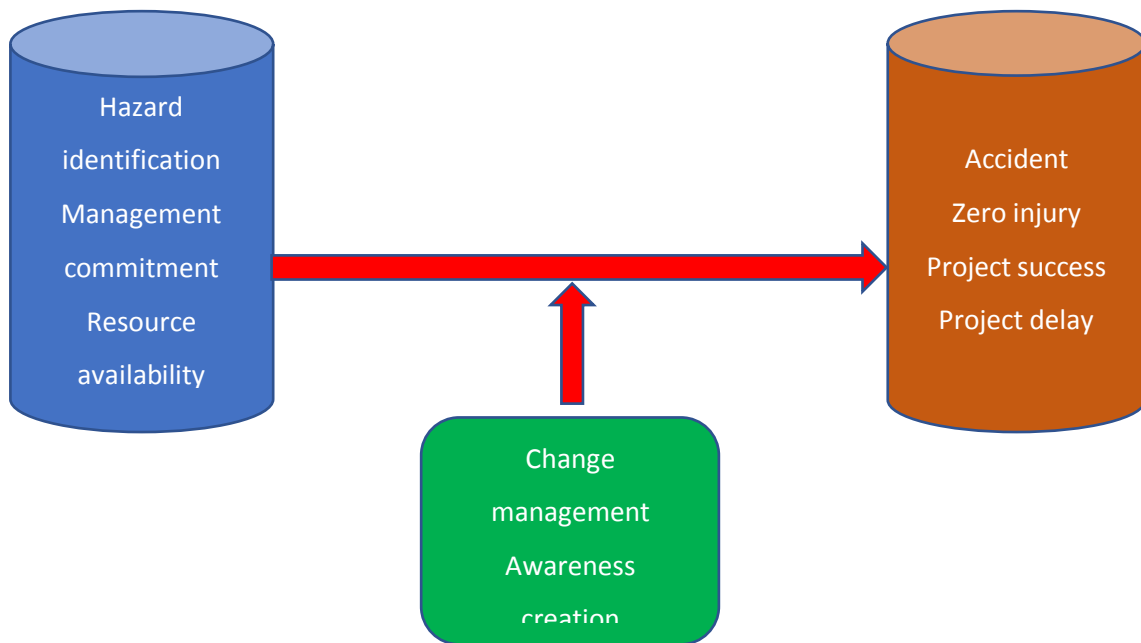
2.8 Effects of Accidents on Construction Projects

Accidents claim the lives of individuals and properties of great value. Control of losses associated with crashes of vehicles round the construction site and therefore the safety of workers should be the day-to-day responsibility of all personnel, even as the responsibility to control other business losses and maintain top-quality performance. A rapid changing and expanding of technology are related to different accidents with high Costs, waste, and poor quality, which decline the profit of a project; therefore, considering the results of accidents on the development project is important (SOURCE).

2.9 Conceptual framework

Based on the theoretical and empirical literature review the following research conceptual framework is laid down to provide a practical shape to the research endeavor.

Figure 2.1 Conceptual framework



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The systematic approach to dealing with the research problem and determining the scientific method of conducting a research is referred to as research methodology. It assists the researcher in being aware of the typical steps used to study a research problem, as well as the underlying logic behind them (Rajasekar, *et al.*, 2013). As a result, this chapter is concerned with research methodology, which integrates the various techniques used for the study in order to achieve the research objectives. It considers the research approach, research design, research population, sample size, sampling technique, data collection procedure, and data analysis.

3.2 Research Design and Approach

The study used a descriptive survey research design because the study was conducted to answer question of how health and safety management is practiced in a building construction project in Hawassa at Japan Tobacco International. The study helped to spot the character of the health and safety measures used on the site and evaluate the company's enforcement mechanisms on the construction site. Direct observation also was used on visits to the construction site to directly observe and document the identified hazards, tasks, job site organization, work practices, equipment and tools being used.

The study used quantitative research approach. For this purpose, a questionnaire was developed, and quantitative data had been obtained through a questionnaire.

3.3 Target Population and Study Units

The population size of this study was comprised of 100 employees of the company that is engaged within the building construction project (project management team, safety officers, site engineers, , supervisors, and other causal and contractual laborer's).

Thus, using census sampling, the study used all employees and management teams available on-site at the time of study as the total expected number was around 100 study units.

3.4 Source of Information and Data Collection Method

3.4.1. Data Sources and Types

Structured questionnaire was developed by studying several international journals. And reference material source of knowledge like books, journals, reports, and related articles collected from the web. The sources of information had been from the most gatherings within the construction project, mainly contractor's side. Those references had been used to arrange questionnaire in respect to the subject under discussion. Closed ended questionnaire was prepared and distributed for all respondents.

3.4.2. Data Collection Method

Pilot questionnaire: it's normal practice that the survey tool should be piloted to check its validity and reliability. The preparation of the questionnaire was based up on the research objectives and theoretical directions derived from the literature review as well as a preliminary questionnaire which consisted of some simple questions on their health and safety awareness and practice. A pilot study was conducted with one project managers, one project engineers, two supervisors and three contracted workers within the company who are engaged on the building project, to test whether the questions are understandable, easy to answer, unambiguous, cover most of the required research questions, etc. Valuable comments were expected to be obtained to enhance the standard of the questionnaire, after a refinement, the questionnaire was ready for the actual data collection.

Observation: the goal of obtaining rich data justifies a groundwork combining other methods of collecting primary data like observation. That involves observing workplace relationship among the workers and work processes/procedures, recording, description, analysis and interpretation of research subjects.

Documentary source: Documentary source data formed a part of the information collection methods. These were including written materials like annual reports, administrative records, policies, procedures, laws, acts, regulations, and minutes of meetings and trainings. Analysis of those sources had helped to triangulate findings supported primarily data.

3.5 Data Analysis Method

In this study, descriptive approach had been the major technique of data analysis using Microsoft Excel spread sheet and SPSS. The quantitative data collected from sample respondent who are working within the company had been analyzed by using averages, percentages, frequency, mean and important index. Tables and figures are used as data presentation tools to address respondents' demographics, safety and health measures, health managements programs and reinforcement technique on safety regulation in currently constriction of the building site.

3.6 Reliability

Lee Cronbach developed Cronbach's alpha as a measure of reliability (1951). It is frequently used to assess the internal consistency or reliability of a psychometric test score for a group of test takers. Cronbach's alpha coefficient of reliability was calculated to test the reliability of the data instrument. Coefficients of 0.90 or greater are nearly always acceptable, 0.80 or greater is acceptable in most situations, and 0.70 may be appropriate in some exploratory studies for some indices, according to Lombard (2010). As a result, R-values of 0.70 or higher were accepted for this study. The results of the reliability test are shown in the table below.

Because the Cronbachs alphas for this study are greater than 0.70 for all scale variables, the data gathered from respondents was reliable and consistent. In other words, the results confirmed the instruments' dependability and consistency.

Table 3.1 Reliability test

Variables	Number of Items	Cronbach's Alpha
Significant health and safety hazards	12	0.86
Challenges of health and safety performance	10	0.79
Health and safety practices	20	0.81

Source: Survey questionnaire

Because the Cronbachs alphas for this study are greater than 0.70 for all scale variables, the data gathered from respondents was reliable and consistent. In other words, the results confirmed the instruments' dependability and consistency.

3.7 Validity

A variety of questions were included in questionnaires to achieve validity. To ensure that the questions are representative, they were developed based on information gathered during the literature review. The consistency with which the questionnaires were administered added to the content validity. To that end, the researcher personally distributed questionnaires to subjects. Furthermore, the questions were written in simple language for clarity and ease of understanding, and the subjects will be given clear instructions. To strengthen the questionnaires, research advisor comments and pilot test feedback were used to make all necessary changes such as reorganizing questions along research questions, eliminating unnecessary questions, and eliminating grammatical errors.

3.8 Ethical dimensions

Every participant in the study had the right to privacy and dignity of treatment, and the researcher kept all information obtained strictly confidential. All assistance, collaboration, and sources from which information was gathered were acknowledged. The following ethical considerations were observed in this study in general. i) Fairness. ii) Intent transparency. iii) Methods disclosure iv) Individuals' respect or integrity v) Subjects' informed willingness to participate voluntarily in the research act

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

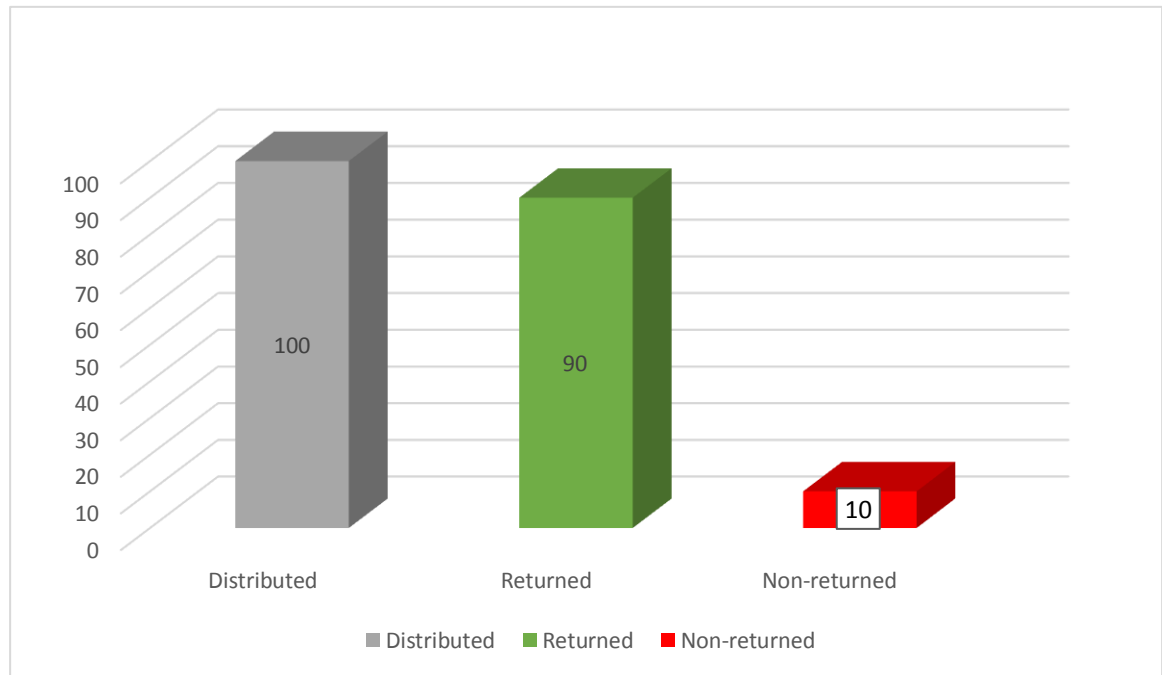
4.1 Introduction

This chapter analyzes the outcomes of collected data from the questionnaire, recorded source, and observation. The first section contains respondents' general information, the second section contains information on the project's current health and safety performance, the third section depicts the major causes of workplace incidents, and the final section and last part contains respondents' observations on issues influencing health and safety implementation. This is to reorganize the data in a systematic manner so that it is clear and unambiguous to understand and thus to be analyzed. The methods of analyzing are using percentages, tables, and charts because this method of data presentation is much more preferred among others, as it provides a clearer picture of the information to be delivered.

4.2 Data Presentation

The questionnaire was created and disseminated to assess the health and safety practices of Japan Tobacco International's Butt and Cutt Line building projects in Hawassa. Project management, the safety officer, site engineers, contractual staff, and casual workers all received 100 copies of this questionnaire. About 90 of the 100 questionnaires were completed and returned, representing a 90 percent response rate. Despite numerous follow-ups, 10% of the respondents did not respond. A 50 percent response rate was considered appropriate for analysis and reporting, a 60 percent response rate was considered good, and a response rate of 70 percent or above was considered very good (Mugenda & Mugenda,2003). As a result, with a response rate of 91 percent, the study was deemed sufficient for analysis and reporting. Figure 4.1 illustrates the percentage of questionnaires distributed and received:

Figure 4.1 Response rate



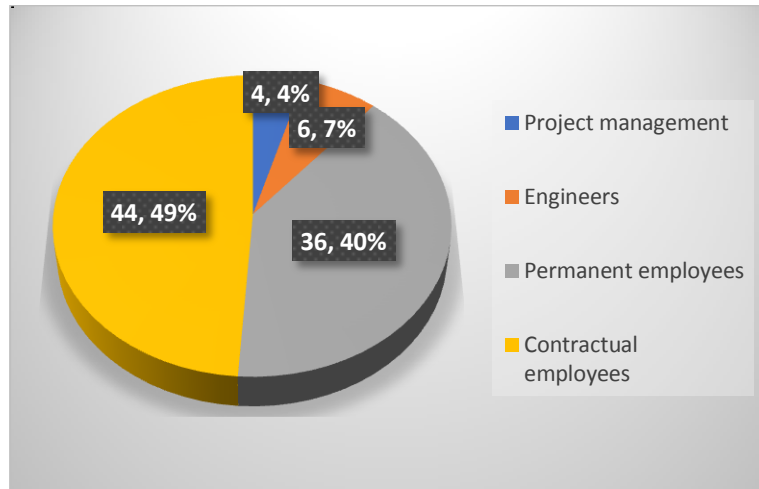
4.3 Demographic Characteristics

This section outlines the findings on the demographic characteristics of the sample which includes job title of respondent, educational background and experience year of employees.

4.3.1 Job title of respondent

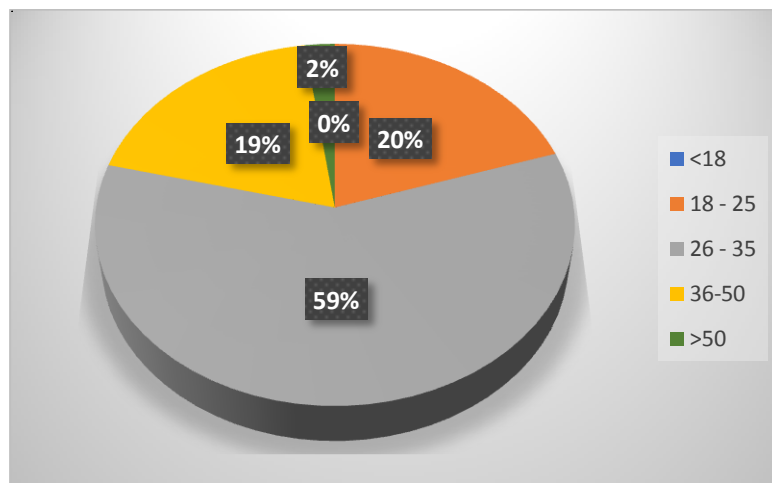
In order to ensure that the responses were reliable and valid, it was important to determine the position of the person who answered the questionnaire within the company.

Figure 4.2 Respondent job position



From the figure above, 4% of the respondents are members of project management, 6.7% of the respondents are engineer, 36.4% of the respondents are permanent employees and 44.5% are contractual employees. Given most of the respondents are direct targets for health and safety implementation, the research focused on the right personnel to acquire relevant and reliable data.

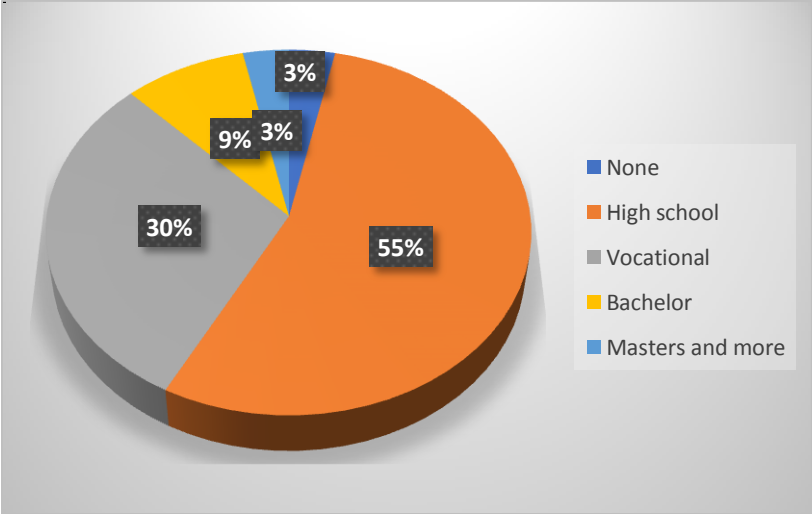
Figure 4.3 Respondents age



From the figure 4.3 above, 2% of the respondents were above the age of 50, 19% were between 36 and 50 years of age, 59% were between the ages of 26 and 35 while the percentage of respondents claiming to be between 18 and 25 were 20%. There was no respondent under the age

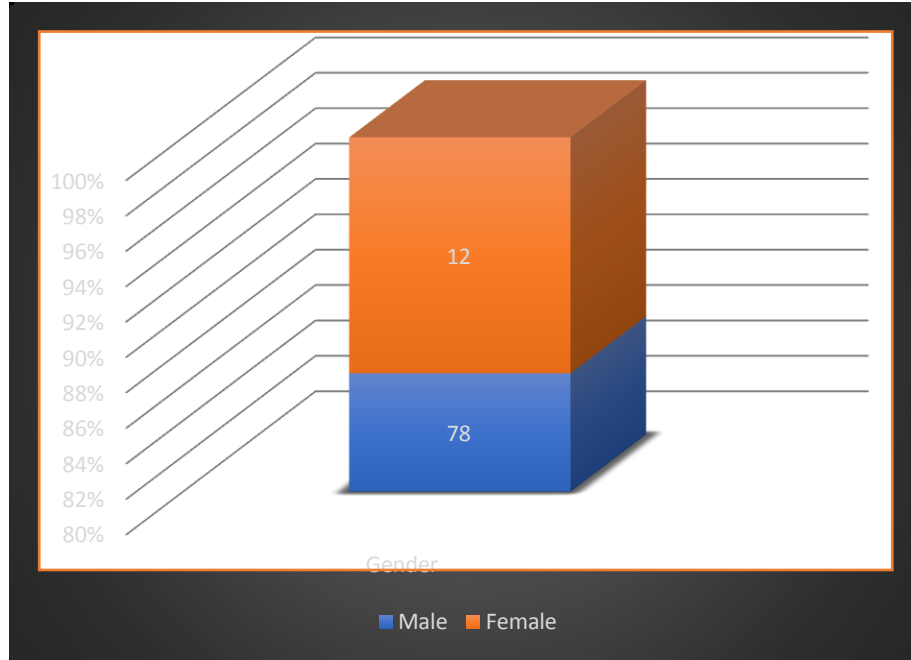
of 18, implying that this is a very good excise in making sure child labor issues are not raised. A majority 80% of the respondents are above the age of 25, implying that data was collected from respondents with an acceptable level of maturity.

Figure 4.4 Respondents level of education



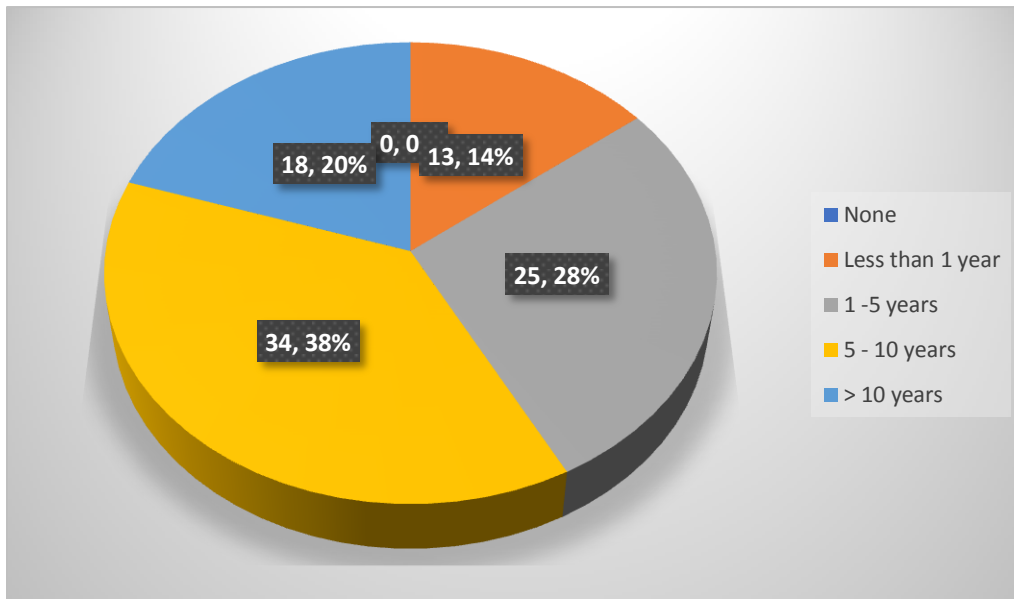
From the figure 4.4 above, no respondent claimed to have received any type of education throughout their life. 32% of the respondents said that they have completed high school while 19% claimed to have completed some vocational training related to the construction industry.9% of the respondents claimed to have completed a bachelor’s degree while 4% said they have completed higher education masters to be specific. The implication with regard to level education of respondents is that, as majority of respondents (almost 97%) have high school education as a least. This means they have the ability to understand the questionnaire and they can provide professional response to inquiries posed related to safety and health in construction.

Figure 4.5 Respondents gender



From the figure above, 13.3% of the respondents were female and 86.7% of the respondents were male. Implies that most of the workers in the construction industry are male given the job is hard labor.

Figure 4.6 Respondents work experience



From the figure above, 6.7% of the respondents have an experience of ten and above years in the construction industry, 34.38% have 5 to 10 Years of experience, 38.42 % have 1 to 5years of experience and 12.13% have less than 1 year of experience in the construction industry. There was no respondent claiming for no experience whatsoever in the industry. More than 75% of the respondents have at least one year experience of work (5 years and more being 55%) implying that they have had a satisfying exposure to health and safety issues in the construction industry.

4.4 Practice of health and safety system

Table 4.1 Organizational factor

SN	Questions	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
		F	%	F	%	F	%	F	%	F	%
1	The company has written health safety policy	4	4.4	12	13.3	19	21.1	47	52.2	8	8.8
2	There is a visible engagement from the management on health and safety issues	0	-	5	5.5	15	16.6	51	56.6	19	21.1
3	The policy is communicated to all concerned parties in the company	9	10.0	18	20.0	29	32.2	34	37.7	0	-
4	The company has a health and safety committee	3	3.3	9	10.0	58	64.4	14	15.5	6	6.6
5	The company has a designated health and safety officer	2	2.2	7	7.7	10	11.1	32	35.5	39	43.3
6	The company holds craft toolbox safety meetings frequently	11	12.2	21	23.3	18	20.0	35	38.8	5	5.5

As seen from the table above 52.2% of the responders stated that they agree that the company has a written policy on health and safety and 13.3% said they disagree that there is a company policy on the subject matter. Almost 78% of the respondents said that they see people from company management team coming to site and commenting on health and safety issues and 5.5% said they didn't see management member engaging in safety issues at the workplace.

While 37.7% of the respondents agree that the policy the company has is communicated to them in a clear matter, 20% of them stated that they disagree. 15.5% and 10% of the respondents said

they agree and disagree with the existence of a safety committee respectively while 64.4% remained neutral on the matter. The highest share of respondents, 43.3% stated that they have seen a safety office onsite actively working on the improvement of workplace safety, 7.7% disagreed while 2.2 strongly disagreed. 23.3% of the respondents said that they disagree with a toolbox talk being held at the site while 38.8% said they agree and have been part of different safety toolbox talks.

Given policy is the base for implimentation of any undertaking in any enterprise, the respondents response indicated that the company has a written health and safety policy. Management commitment is a crucial part of policy implimentation. As such, the respondents indicated that they have seen members of company management team coming to the site and spotting safety issues, having safety dialogue and join site meetings on health and safey. This means the company management shows a great deal of commitment towards health and safety. With high percentages of responses on policy communication and toolbox talks, the research had found out that the company's health and safety performance with regard to organizational factor is good.

Table 4.2 Technical factor

SN	Item	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
		F	%	F	%	F	%	F	%	F	%
7	There is a system or procedure put in place for immediate reporting and investigation of workplace incidents	2	2.22	13	14.4	20	22.2	24	26.6	31	34.4
8	There is a safety suggestion program in place for employees	22	24.4	45	50.0	13	14.4	6	6.6	4	4.4
9	Disciplinary measures will be taken on employees who doesn't follow company safety rules	9	10	13	14.4	42	46.6	19	21.1	7	7.7
10	The company has a nurse or a doctor to provide immediate medical assistance	15	16.6	18	20.0	19	21.1	27	30.0	11	12.2

34.4% and 26.6% of the respondents strongly agreed and agreed with the idea of a system being in place for the investigation of any workplace accident and learning shred afterwards while

14.4% disagreed with it as put in the above table. While 50% of respondents disagree that there is a system for them to be heard and put their suggestions forward, only 6.6% said that they agree. 46.6% of them remained neutral to this question, 21.1% said that they agree and 14.4% said they do not agree with the fact that there is a procedure to execute any safety violations observed at the workplace. 30% of the respondents said that they agree with medical personnel being on-site for their attention, yet 20% disagree and 16.6% strongly disagreed to it. Overall, there is a gap in technical health and safety performance. Incident reporting and investigation of safety incidents that occur at the workplace are provided as good exercises. Yet, when it comes to engaging employees in systems put in place such as safety suggestions and disciplinary measures taken on employees who violate safety rules at the site is noted as a gap.

Table 4.3 Compliance factor

SN	Item	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
		F	%	F	%	F	%	F	%	F	%
11	The company has a nurse or a doctor on staff	0	-	0	-	5	5.5	67	74.4	18	20.0
12	First aid materials are available and easily accessible in the company	2	2.2	6	6.6	14	15.5	38	42.2	30	33.3
13	The company provides health and safety training to employees regularly	0	-	3	3.3	9	10.0	59	65.5	19	21.1
14	The company provides safety orientation for new employees	1	1.1	1	1.1	22	24.4	50	55.5	16	17.7
15	The company conducts regular site safety inspection	6	6.6	17	18.8	29	32.2	32	35.5	6	6.6
16	The safety inspection results are documented and communicated	14	15.5	39	43.3	31	34.4	6	6.6	0	-
17	Hazardous jobs are clearly identified, and special attention is given by the company	2	2.2	10	11.1	18	20.0	43	47.7	17	18.8
18	Unsafe jobs will be stopped by safety officers when they are found	19	21.1	31	34.4	33	36.6	7	7.7	0	-
19	The company gives priority for safety as they give priority for profitability	17	18.8	23	25.5	11	12.2	29	32.2	10	11.1

It can be observed from table 4.3 about 42.2% of respondents stated that there is an availability of first aid kit on-site and 6.6% said they disagree and never saw first aid kits around. A majority 65.5% of the respondents agreed to the company being able to provide them with different training on protecting themselves from hazards and using their personal protective devises, only 3.3% said they disagree and claimed to never receive a training from the company on health and safety. While 1.1% of the employees said that they did not receive safety induction when they joined the company and 55.5% said they agree that there was an induction when they first started working a the construction site. A majority 35.5% of the respondents said that they have seen and agree with safety officers conducting inspections, only 6.6% agreed to the ise of those safety inspections being documents and actually being used for the purpose intended with improvements made on the ground. While 20% of them remained neutral on identification and attention given to hazardous jobs such as chemical, hot work, electric etc. 47.7% and 11.1 agreed and disagreed

respectively with identification and special procedure being in place for hazardous jobs. With regard to any unsafe jobs and their consequences at the workplace, only 7.7% agreed and said that safety officers will take action to stop the job immediately, yet majority remained neutral with 36.6% and 34.4% of them said they disagree. 25.5% disagree with the company giving priority on safety from profitability and 32.2% said they agree that profitability comes second to the company in comparison with safety.

Overall, environmental factors with respect to health and safety are good. With first aid kit availability, different types of trainings being provided and safety inductions to employees that join the company for the first time is responded to as a good practice. Major findings classified as a gap however have been recorded as the fact that there are no clear safety inspection schedules and documentation. Given safety inspections and corrective actions based on the inspections bring about a very good safety performance, this has been noted as a big gap by the research. Along with unsafe jobs not being stopped by the supervisors on site, this puts the workers in risk of injury.

Table 4.4 Implementation of health and safety procedures

SN	Item	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
		F	%	F	%	F	%	F	%	F	%
20	There should be a strong policy or regulation for the implementation of safety and health by the government	0	-	3	3.33	18	20.0	49	54.4	20	22.2
21	The accidents occurred before are mainly due to employee's mistake	6	6.67	13	14.4	47	52.2	18	20.0	6	6.6
22	The accidents occurred before are mainly due to faulty procedure of work	14	15.5	14	15.5	30	33.3	23	25.5	9	10.0
23	Sometimes I must ignore a safety rule or policy in order to complete an assignment to meet the schedule	5	5.5	12	13.3	15	16.6	36	40.0	22	24.4
24	Safety signs are properly put in place at the working site	0	-	0	-	15	16.6	49	54.4	26	28.8
25	The company has a medical insurance for all workers	6	6.6	13	14.4	39	43.3	22	24.4	10	11.1
26	When workers lose their working ability due to occupational	0	-	2	2.2	17	18.8	48	53.3	23	25.5

	accident, they are given compensation										
27	I have the safety knowledge needed for the hazards we face on this job.	19	21.1	23	25.5	31	34.4	7	7.7	3	3.3
28	The site supervisors always follow site safety rules and procedures very closely	14	15.5	28	31.1	23	25.5	15	16.6	10	11.1
29	The company do not force workers to work too many hours per week on their job	3	3.3	4	4.4	16	17.7	50	55.5	17	18.8
30	The laws, directive and regulations of the country regarding health and safety are known and implemented by management of the company	0	-	1	1.1	12	13.3	46	51.1	31	34.4

It can be observed from table above that 54.4% and 22.2% of the respondents agree and strongly agree that there should be a strong policy or regulation for the implementation of safety and health by the government. While majority 52.2% of the respondents remained neutral, 20% agreed and 14.4% disagreed on the employee being responsible for the accidents that occur on site. Again, majority 33.3% remained neutral on the accidents main reason being a problem on the procedure of work, 25.5% of them said that it is the faulty procedure and 15.5% said it is not when it comes to accidents happening on the work. Majority 40% and 24.4% agreed and strongly agreed to the idea of compromising safety to have their work done with only 13.3% and 5.5% said they disagree and strongly disagree and put safety first before putting themselves at risk to have work done. None of the respondents claimed to the unavailability of safety signs and 54.4% stated that there is effective, and enough warning safety signs put in place. While 24.4% of respondents said they agree with a medical insurance being available for their utilization whenever they face medical problems, 14.4% disagreed. The majority 53.3% of respondents said that they have witnessed workers who became ill due to their work or faced an incident were given the right amount of time and treatment to recover before coming back to work while 2.2% disagreed to it. Only 7.7% of the respondents stated that they have the required knowledge to spot workplace risks for them to act right away while 25.5% said they disagree to have acquired such knowledge. 31.1% of respondents disagree with supervisors following safety rules and respecting them and 16.6% of them agreed supervisors do follow procedures and implement what is necessary to keep the site incident free. The big 55.5% of respondents agree that they are not forced afterhours and 4.4% said they disagree. 51.1% agreed and 34.4% strongly agreed to the company's effort of

implementing directives and laws of the country and only 1.1% said they do not agree as it can be observed from table 4.4.

With regard to the implimentation of health and safety procedures, the tables above concludes the following. The main causes of incidents and injuries are caused by the negligence and lack of attention by the employees and faulty procedure of work. The researcher found out that these issues are high contributors of incident numbers occurring per year. In relation, the fact indicated as superviosrs on site being unable to make corrections on safety violations weather they have the knowledge or not does depreciate the performance of the company in relation to health and safety. Overall, some procedures are in place for superviosrs and employees to implement with the gap of superviosrs being negligent and unable to enforce and follow up on those procedure creating a huge gap when it comes to health and safety performance.

Table 4.5 Immediate causes of accidents

S N	Questions	Very low		Low		Medium		High		Very high	
		F	%	F	%	F	%	F	%	F	%
1	Excavations (Slides, collapse, confined space...etc.)	4	4.4	12	13.3	19	21.1	47	52.2	8	8.8
2	Electricity	13	14.4	37	41.1	27	30.0	13	14.4	0	0.0
3	Crain, forklift, and other machinery	15	16.6	23	25.5	41	45.5	8	8.8	3	3.3
4	Falls and trips	1	1.1	5	5.5	29	32.2	38	42.2	17	18.8
5	Working at height	3	3.3	15	16.6	36	40.0	17	18.8	9	21.1
6	Hazardous substances; chemicals and toxins	33	36.6	39	43.3	13	14.4	3	3.3	2	2.2
7	Noise	41	45.5	20	22.2	24	26.6	4	4.4	1	1.1
8	Tools and Machinery; grinder, welder...etc.	1	1.1	3	3.33	27	30.0	31	34.4	28	31.1
9	Fire	16	17.7	13	14.4	55	61.1	5	5.5	1	1.1
10	Manual labor	4	4.4	8	8.8	32	35.5	29	32.2	7	18.8
11	Horseplay	44	48.8	26	28.8	13	14.4	7	7.7	0	0.0

The table above indicates respondents' feedbacks on the main causes of accidents in the workplace. As clearly put, the highest percentage of them thought that working at height, falls and trips, and tools and machinery are the highest causes of incidents. With horseplay, fire, noise, and hazardous chemicals being exceptionally low, Crain and forklift operations, electricity, manual labor have been mentioned as with medium frequency of causing accidents at the workplace.

Table 4.6 Contributors of project health and safety performance

SN	Questions	Very high		High		Moderate		Low		Very low	
		F	%	F	%	F	%	F	%	F	%
1	Safety and Health Policy and procedures	5	5.5	22	24.4	34	37.7	21	23.3	8	8.8
2	Accidents / Incidents / Near Miss / First Aid Case Reports	9	10.0	23	25.5	30	33.3	19	21.1	9	10.0
3	Fire prevention and control	15	16.6	31	34.4	28	31.1	12	13.3	4	4.4
4	Risk Assessment	13	14.4	28	31.1	30	33.3	17	18.8	2	2.2
5	Safety Signals, Signs and Barricades	46	51.1	29	32.2	11	12.2	3	3.3	1	1.1
6	Working environment (Humidity, space ... etc.)	0	0.0	27	30.0	32	35.5	20	22.2	11	12.2
7	Reward and Punishment System (Incentives)	11	12.2	18	20.0	38	42.2	19	21.1	4	4.4
8	Government regulations	6	6.6	9	10.0	27	30.0	29	32.2	19	21.1
9	Complexity of the Design	1	1.1	5	5.5	28	31.1	29	32.2	27	30.0
10	Type of Owner/attitude of owner/	9	10.0	23	25.5	33	36.6	25	27.7	0	0.0
11	Weather Condition	6	6.6	15	16.6	21	23.3	28	31.1	20	22.2
12	Project Cost	6	6.6	23	25.5	29	32.2	27	30.0	5	5.5
13	Project Duration	5	5.5	22	24.4	37	41.1	23	25.5	3	3.3
14	Contractual Specification of health and safety	11	12.2	15	16.6	43	47.7	13	14.4	8	8.8
15	Safety and Health Training	47	52.2	26	28.8	15	16.6	1	1.1	1	1.1
16	Personal Protective Equipment	51	56.6	37	41.1	2	2.2	0	0.0	0	0.0
17	Emergency Planning and Procedures	11	12.2	13	14.4	39	43.3	15	16.6	12	13.3
18	Health and Safety Inspection	48	53.3	30	33.3	8	8.8	4	4.4	0	0.0
19	Health and Safety Management Meeting	5	5.5	8	8.8	23	25.5	24	26.6	30	33.3
20	First-Aid Provision	1	1.1	9	10.0	33	36.6	29	32.2	18	20.0

This section of the questionnaire was prepared to see how the participants perceive their project's health and safety performance and what matters most when it comes to making safety better at the site. As seen on the above table, the respondents given the highest attention to personal protective equipment's, health and safety trainings, safety signs and health and safety inspections. This indicated that they believe the points mentioned above matter most in the betterment of the project's safety performance and its success. While health and safety management meetings, first aid provision, complexity of design, government regulation and weather condition received the lowest ranks in the performance of health and safety implying that the respondents think that these issues don't matter much when it comes to the success of the project and performance of safety on site. Other measures taken remained in the middle with the implication of a grey area where the points are not as contributory nor are they damaging to the performance of safety.

4.5 Results from site observation

The researcher also performed personal site observations at the construction site along with some of the respondents to substantiate the results obtained using questionnaires, from various data types and sources, the results of site observations revealed the following:

Factors to blame for construction accidents

Accidents are primarily caused by human behavior, and difficult worksite conditions, which result in unsafe work methods, equipment, and procedures. The scaffoldings observed at the site chosen for the study are timber scaffolding that has been in use for an extended period of time and was built without a design. The company has a scaffolding standard putting in place a procedure to working at height but not effectively implemented. There were some workers wearing inappropriate PPE and there is high reluctance from employees to wear the PPE claiming it is not comfortable or the weather being too hot.

Health and safety issues

- Housekeeping at the construction site is not well kept
- The barrier should be placed well back from the edge of the excavation to allow for work to be done around the edge of the excavation.

- Despite the fact that the work contract requires the application of health and safety at the construction site where it is supposed to be applied, the site supervisors are hesitant to properly supervise the implementation of the contract on safety with the utilization of proper PPE.
- Workers are sometimes hesitant to use PPE (e.g., safety shoes, gloves, harness, etc...), believe it will reduce their productivity and is not comfortable to wear.

CHAPTER FIVE

MAJOR FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1. Introduction

Workplace safety and health is a broad discipline that encompasses many aspects of human life that are regarded as essential for a healthier and more sustainable way of life. The majority of the findings are consistent with existing literature from other developing countries. The level of occupational health and safety practices in the Ethiopian construction industry is found to be very low. Indeed, the construction industry is working hard to improve its health and safety record; based on the analysis, this paper concluded the following.

5.2 Summary of Major Findings

The majority of respondents (78%) are over the age of 26. This demonstrates their maturity in responding to the research questions. Furthermore, because all respondents have some level of education, they can understand the questionnaire instruments and provide professional responses to questions about the subject. Almost 79% of the respondents have at 1 years of experience in the construction industry, this means they have all the necessary input to be able to give feedback to the questionnaire.

According to the findings, the construction site has a safety and health officer, and respondents fairly represent all professions involved in the management of safety and health in the construction industry. The majority of respondents (52 percent) have 5 or more years of construction industry experience and can thus provide relevant information about safety and health management performance based on their experience.

The study's findings identified gender proportion inequity in the construction sector, as the number of female construction workers is very small in comparison to the number of male construction workers. As a result, the construction industry is unable to capitalize on female

employees' contributions to construction site safety and health because females are generally regarded as more meticulous than males.

The first goal of the research was to determine whether the project has clear and engaged management in terms of health and safety. According to the research findings, there is a high level of management commitment to keeping people on the ground safe and any hazardous activities well attended. Observations also revealed that senior management was visiting the site and commenting on safety concerns. According to the research, there is a clear and understandable safety policy that is also displayed at the construction site for all employees to take note of.

The second goal of the study was to investigate the current level of health and safety performance in Hawassa's Butt and Cutt construction project. According to the research findings, there is an overall good performance when it comes to practicing health and safety. There is a lot of good practice in terms of having and using first aid kits and nurses, as well as health and safety trainings and inductions for new employees. Furthermore, the study found that there is good performance in hazard identification and remedial actions as correction measures. It has also been clearly seen that safety signs with the local language are posted in appropriate locations. However, the study found that immediate supervisors of casual and contractual workers are not involved in health and safety. Supervisors place more emphasis on the work schedule than on safety, resulting in compromised safety rather than having the appropriate PPE and other work procedures in place before performing a task.

The third research goal was to determine whether there were any health and safety violations and what the problem was in relation to management and employees. According to the research findings, the most common noncompliance is the failure to use personal protective equipment and to prioritize safety. There was enough and adequate personal protective equipment provided for the workers, but because they are not used to wearing such equipment, many people complained that the equipment was uncomfortable to work with. The issue here is that working without gloves while using hand tools expedites the job while putting the worker at risk. Supervisors are the worst offenders when it comes to meddling management. This is demonstrated by the fact

that, in order to meet a deadline to complete a line of work, they tend to compromise safety and push employees to rush into work without taking safety precautions documents into account in risk assessments.

Overall, the research intended to observe the performance of health and safety and it's related challenges at the Butt and Cutt Line construction project at Japan Tobacco International Ethiopia. As such, the research has successfully managed to find out that there is clearly put policY and procedure that is being enforced throughout the company's different locations. There is a good exercise of health and safety in general but there are some main shortcoming as observed by the researcher as indicated above.

5.3 Conclusion

This research was done in one of international recognized multi-national companies in the country, giving the edge of the findings being mostly positive. The research did give a clear insight on what actually is the situation on the ground. While there are good learnings from this project when it comes to handling health and safety issues, there are also some concerns that should be considers in any construction project. The sector itself is very complicated and needs a meticulous exercise to upgrade health and safety performance.

The research indicated that there is a clear training schedule for all employees, records show that there is a system in place to have them trained whenever they start a new activity. Be it working at height, hot work or excavation, the employees are given toolbox talks on hazard identification, anticipation, and control measures. This exercise is also practiced during the induction process of newly employees' workers before starting to participate in a particular activity. The fact that there is a clear policy on health and safety and how the company puts safety first and pictures of company management with written comments on the compound indicates the commitment the company shows to its employees on how serious they are regarding safety. Thus, organizational issues are well addressed and there is a visible leadership commitment to keeping everyone safe.

There is an issue however when it comes to employee participation. This was indicated in the fact there is no system for employees to forward their suggestions on safety improvement and their lack of participation in hazard hunting and accident investigation. Related to this is the fact that supervisors do tend to prioritize job deadlines than the safety of the employees.

The major sources of incidents have been indicated to working at height, falls and trips and tools and machinery. Given this is a building project, there is a high level of activity on working at height. With the use of different ladders and scaffolding, the risk becomes higher. There had been witnessed employees have put their harness on whenever they go on the scaffolding or any other elevated flat forms including scissor lifts to work at height. Tools are biggest assets when it comes to a construction project such as this, with a lot of handheld tools the research shown that the risk had increased for a lot of first aid case, near misses and eventually a lost time injury. Fire, noise, and chemical are the lowest risky jobs which mean these activities are being monitors effectively. There can be seen a lot of fire extinguishers present to mitigate the risk of a fire from grinding and welding activities.

As a performance enhancement measure, the research concluded that trainings, health and safety inspections, safety signs and personal protective equipment's are the main contributors. These had been the issues indicated as major areas of attention for a great health and safety performance in the construction industry.

The biggest challenge to the performance of health and safety in the construction industry is the attitude of work before safety. Even if there is a clear commitment from management with the right amount of safety budget, appropriate and enough personal protective equipment provided and safe working procedures such as work permits in place, if supervisors force employees to have a job done without considering the importance of working safety, incidents are inevitable.

5.4 Recommendation

In order to improve overall health and safety performance of a project in Ethiopia, the researcher suggests the following recommendations.

The country's construction health and safety directives and rules should be strictly enforced in their application on construction sites, as the majority of health and safety management negligence is due to a lack of enforcement. The government of Ethiopia follows the direction of ILO in implementing appropriate ways of working in the workforce health and safety. To that end, health and safety enforcement agencies and local authorities must conduct regular construction site health and safety inspections and take action against construction firms that fail to protect the health and safety of their construction workers. Furthermore, the construction health and safety enforcement agency should require timely and accurate health and safety reports from high-rise building construction firms, as these reports and records serve as a data source for future research in the field in order to develop better health and safety measures in the country.

Supervisors and site engineers have the biggest responsibility in enforcing health and safety regulations. The policy and availability of training and personal protective equipment alone will not make the difference. These supervisors shall have a mindset of putting safety in front of their deadlines and make sure their employees do their job with respect to the safe work procedures put in place.

There needs to be an incentive mechanism for the employees to be part of. By this the researcher meant that there should be both positive and negative re-enforcement for the actions employees take regarding safety. For positive reinforcement they might use a system such as safety suggestion and safety dialogue with a recorded format so that the employee with the most safety suggestion and dialogue shall be rewarded with a bonus or in any other relevant reward. For negative re-enforcement, employees with repetitive safety violations can be given yellow and red card and have to go to administrative office for a record and consequences if actions are repeated in negligence.

Change management is a big challenge in every industry. As such, given Ethiopia has a very low experience in health and safety, there is always a resistance to change. To help shift this, there needs to be rigorous training provisions that can be effective with relevant videos and pictures. Verbal trainings usually fail to translate the right information when it comes to health and safety and there needs to be a visual message including previous accidents and ways of working so that the employees have an in-depth understanding of the issue at hand.

Inspection and strict follow up needs to be enforced. If there is no system to correct a violation, then there will not be an improvement on the safety performance. Inspections need to be taken serious with records and signatures from supervisors so that they feel health and safety is also their responsibility and they will take liable for any incident and issues that surface with the consequences.

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APPENDIX A: QUESTIONNAIRE

St. Mary's University, School of Graduate Studies

Department of Project Management

Assessment of Health and Safety Performance and Challenges at the Butt and Cutt line Construction Project of Japan Tobacco International Ethiopia.

Dear Participant

This questionnaire is presented to assess the performance of health & safety management at the Butt and Cutt Line construction project of Japan tobacco international Ethiopia. The main objective will be to assess the current safety and health management practice at the project.

The information you provide will be used for academic purpose only. All information and feedbacks will be kept strictly confidential. Your experience and educational background in the construction industry will greatly contribute to the success of my study and I believe this kind of study will be an input for the development of Ethiopian construction industry. So, I am kindly requesting you to respond each and every question.

Thank you

Yonatan Wondemagegnehu

+251919852349

Email: yonatan0744@gmail.com

PART ONE: ABOUT THE PARTICIPANT

Please mark \surd on the space provided

1. Respondent’s job title

Company management Project Manager Project supervisor Casual Worker
 Other

2. Age

<18 18-25 26-35 36-50 >50

3. Educational status

None High School Vocational Bachelor Masters and more

4. Gender

Male Female

5. Experience of construction project work

None Less than 1 year 1-5 years 5-10 years More than 10 years

PART TWO: HEALTH AND SAFETY PERFORMANCE ASSESSMENT

Please mark \surd on the space provided

SN	Description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	The company has a relevant health and safety policy and procedures					
	There is a visible engagement from the management on health and safety issues					
2	The policy and procedures are communicated to all concerned parties in the company					
3	The company has a health and safety committee					
4	The company has a designated health and safety officer/supervisor					
5	The company holds toolbox safety talks on a regular basis					
6	The company provides PPE on time and enforces their use					
7	There is a system or procedure put in place for immediate reporting and investigation of workplace incidents					
8	There is a safety suggestion program in place for employees					

9	Disciplinary measures will be taken on employees who doesn't follow company safety rules					
10	The company has a nurse or a doctor to provide immediate medical assistance					
11	First aid kits are available and easily accessible in the company					
12	The company provides health and safety training to employees regularly					
13	The company provides safety induction for new employees					
14	The company conducts regular site safety inspections					
15	The safety inspection results are documented and communicated					
16	Risk assessment is regularly done to assess the risks associated with Jobs					
17	Unsafe jobs or conditions will be stopped by safety officers when they are found					
18	The company brings people first than profit or operation.					
19	Usually, accidents are caused by negligence of employees					
20	Usually, accidents are caused by faulty PPE or work procedures					
21	Sometimes I have to ignore a safety rule or policy to complete a task to meet their KPI					
22	Safety signs are correctly places in a clear and understandable manner					
23	The company has a medical insurance for all workers					
24	When workers lose their working ability due to occupational accident the y are given the appropriate compensation					
25	I have enough safety knowledge needed for the hazards we face on this job					
26	The site supervisors always follow site safety rules and procedures					
27	The company do not force workers to work too many hours per week on their Job					

PART THREE: IMMEDIATE CAUSES OF INCIDENTS

Please mark √ on the space provided

SN	Description	Very low	Low	Medium	High	Very high
1	Excavations (Slides, collapse, confined space...etc.)					
2	Electricity					
3	Crain, forklift, and other machinery					
4	Falling					
5	Falls and trips					
6	Working at height					
7	Hazardous substances; chemicals and toxins					
8	Noise					
9	Tools and Machinery; grinder, welder...etc.					
10	Fire					
11	Manual labor					
12	Horseplay					

PART FOUR: WHAT MATTERS MOST WHEN IT COMES TO PROTECTING YOUR HEALTH AND SAFETY AT THE SITE

Please mark √ on the space provided

SN	Description	Very high	High	Moderate	Low	Very low
1	Safety and Health Policy and procedures					
2	Accidents / Incidents / Near Miss / First Aid Case Reports					
3	Fire prevention and control					
4	Risk Assessment					
5	Safety Signals, Signs and Barricades					
6	Working environment (Humidity, space ... etc.)					
7	Reward and Punishment System (Incentives)					
8	Government regulations					
9	Complexity of the Design					
10	Type of Owner/attitude of owner/					
11	Weather Condition					
12	Project Cost					
13	Project Duration					
14	Contractual Specification of health and safety					
15	Safety and Health Training					
16	Personal Protective Equipment					
17	Emergency Planning and Procedures					
18	Health and Safety Inspection					
19	Health and Safety Management Meeting					
20	First-Aid Provision					