ADDIS ABABA UNIVERSITY

COLLEGE OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMENT

Assessment of Construction Safety and Health Management Practice in Building Construction Projects: The Case of Taurus Construction, Addis Ababa

ID : GSR/3633/15

By:

Biniam Lakew

Advisor: Dr. Seifu Mamo (PhD)

June, 2024

Addis Ababa, Ethiopia

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Master Thesis Submitted to the Department of project management, Addis Ababa University in Partial Fulfillment of the Requirements for the Award of Master of Arts (MA) degree in Project Management.

Dr. Seifu Mamo (PhD)	----------	----------
Name of advisor	**Signature**	**Date**

June, 2024

Addis Ababa, Ethiopia

DECLARATION

I declared that this work entitled **"Assessment of Construction Safety and Health Management Practice in Building Construction Projects : The case of Taurus construction in Addis Ababa**" is a result of my own effort and study and all sources of materials used for this study have been duly acknowledged. I have produced it independently except for the guidance and suggestion of my research advisor. Moreover, this study has not been submitted for any degree in this and/or other universities.

Biniam Lakew	----------	----------
Name of Candidate	Signature	Date

STATEMENT OF CERTIFICATION

This is to certify that this study, **"Assessment of Construction Safety and Health Management Practice in Building Construction Projects: The Case of Taurus Construction,in Addis Ababa "** undertaken by **BINIAM LAKEW BEKELE** for the partial fulfillment of Master of Arts (MA) Degree in project management at Addis Ababa University, is his original work and not submitted for any degree either at this or at other universities.

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Advisor's Name	Signature	Date
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Name of Department Head	Signature	Date

APPROVAL

As members of the board of examiners, we examined this thesis entitled "Exmining the Effects of Construction Safety and Health Management Practices in Building Construction Projects in Addis Ababa: The case of Taurus construction by Biniam Lakew. We, hereby certify that the thesis is accepted for fulfilling the requirements for the award of the degree of "Masters".

Board of Examiners

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Dean, Graduate Studies	Signature	Date
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Advisor	Signature	Date
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External Examiner	Signature	Date
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Internal Examiner	Signature	Date

DEDICATION

I dedicated this research paper to my families who has been given meaning to my life. This is also dedicated to everyone around me, whom God has blessed with.

ACKNOWLEDGEMENT

First, I would like to thank Lord the Almighty for giving me the perseverance to go through the master's program. I also would like to thank my research advisor Dr. Seifu Mamo (PhD) for his constructive and unreserved advice for accomplishing my task. Without the guidance and assistance of my research advisor, this research work would not have been successful. Thus, his leadership and assistance deserve due recognition.

I Also would like to give big thanks to the Taurus Construction management team, particularly Mr. Ermias Kebede (Chief Executive Officer (CEO)), Melaku Mered (Construction Department Manager) and Hana Getachew (Follow-up Engineer). Their invaluable contributions in providing guidance and assistance in collecting essential data and information for my project work are greatly appreciated. I am also thankful to all the staff members who played a role in supporting my project.

Additionally, I would like to express my deepest gratitude for the unwavering support and encouragement of my father throughout this journey.

Last but not least, I want to thank all my family and friends for motivating, supporting and encouraging me throughout the entire process.

ABSTRACT

The main aim of this study was to assess the safety and health management practice of Taurus Construction Company. The study utilized designs and both qualitative and quantitative research approaches. The researcher utilized convenience and purposive non-probability sampling designs.56 samples were selected from the total of 56 target population who have been working in the company as the scope of the study and the data was collected through standard questionnaire, and interview. Primary and secondary data were used in the research. The results were analyzed and interpreted by using descriptive statistics. Safety and health measures have been taken by the construction company, the company had different safety and health management strategies, but the company has low level safety and health management rules. The researcher recommended that the management of the construction company should be committed to practice that safety and health management strategies in the company and the workers should avoid their negligence to reduce work site accidents and losses of lives.

Key words: **Safety, health, construction sites, safety and health management practice**

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ABVBREVATIONS AND ACRYNOMYS

ILO=International Labor Organization

SH= Safety and Health

SHMP=Safety and Health Management Practices

SPSS=Statistical Package for Social Science

WHO=World Health Organization

CHAPTER ONE

INTRODUCTION

1. 1. Background of the Study

Construction industry is one of the vital economic sectors and mainly considered as the backbone of development of all nations. Construction site is a very important place, where a considerable number of workers with various professional back ground (Vithartant, 2015) are involved in construction activities. Accidents with the resulting injuries and ill health problems in workplaces insisted organizations to put much effort and develop effective strategy on safety and health sustain best practices (Ramazan, 2016). As people spend more than one-third of each day at work (Roberto, 2006), it has been an important field of interest for industries especially in developing countries to improve safety and health (SH) and productivity of employee (Ramazan, 2016). The construction sector is characterized by countless incidences of injury, absenteeism, death and huge compensation and replacement cost resulted from accidents in hazardous conditions in construction sites (Mulinge, 2014). Injuries in construction sectors pose a major health and development problem which could be prevented implementing appropriate safety and health practices. Out of the total 3 billion workers in the world, over 85% of them work and live in condition which no access to proper and effective safety and health management practices and facilities (Rantanen, 2012).

According to Seifedin 2014, the safety and health management practice in the construction sector is one of an essential component in the processes of construction when it can be preferred as a mitigation measurement before an incidence occurring. However, in all over Ethiopia, millions of daily laborers work in big constructions through unsafe working environment and without supportive and protective equipment. They do not have protective caps, hand gloves, eye glasses, working clothes, shoes and others. They work on high rise buildings standing on old and inclined wooden scaffolds and ladders; they even transport heavy construction materials on them. Moreover, they do not have safety nets, restraint and fall arrest systems. As a result, a dozens of daily laborers get different serious injuries. Many, in fact, lose their lives.

However, construction project poses enormous challenges to not only finish within an owner‟ schedule and budget, but also eliminate and minimize harmful impacts to the environment. Construction has significant impacts on the natural environment (Hendrickson and Horvath, 2000).

Even a minor impact, such as a small release or spill of hazardous substance can cause a health or environmental threat and lead to costly cleanup activities.

In Ethiopia, during the last few years several accidents have occurred on various sites of construction projects all over the country where some of them were cause for fatal injuries dute absence of safety and health management practices. Due to this, construction sector become one of three most hazardous and dangerous industries with frequent and high rate occurrence of accidents which entails both fatal and non-fatal injuries and ill-health problems to workers, practitioners as well as great loss of economy to the company and country at large (Hannan, 2017). Although many prevention efforts and intervention programs have been undertaken throughout the country, it is recognized that construction workers continue suffering from low to extremely high risk fatal and non-fatal injuries. Only 19% of global work related deaths are thought to account due to accidents and the remainder being due to ill-health problems and diseases (Karen, 2009). An estimate of studies conducted by ILO indicated that more than 100,000 construction workers die every year at world level i.e. death of around one worker every five minutes (ILO, 2010). In most countries the construction industry continues to account for a disturbingly high proportion of both fatal and non-fatal accidents and injuries of workers (Thewodros, 2016).

Safety can be defined as the state of being "safe", the condition of being protected against physical, social, spiritual, financial, political, emotional, occupational, psychological, educational or other types or consequences of failure, damage, error, accidents, harm or any other event which could be considered non-desirable. Safety can be defined to be the control of recognized hazards to achieve an acceptable level of risk. This can take the form of being protected from the event or from exposure to something that causes health or economic losses. It can include protection of people or of possessions. Similarly construction site safety can be defined as the efficient and effective implementation of the policies and tasks necessary to satisfy the safety of a construction firm's employees and management.

Construction safety focuses on the careful management of processes involved in the production and distribution of products and services within construction sites (Bernold, 1993). The subject of health and safety is very wide and can be approached from different perspectives such as management, medicine, psychology, sociology and economics to investigate the determinants and

implications of safety and health for individual workers, economies and societies (Theodossiou, 2010).

Safety and health management practice is essential knowledge in a project management area which recognized in the guide to the project management body of knowledge. Safety and health management practice is expected to take account of all risk and accidents that may possibly be expected that put project employee at risk. The Safety and Health (S &H) of any workplace is very important to diminish such risks, legally and ethically, but in mainly dangerous contexts such as the construction industry S &H takes on perilous importance as daily activities of the industry are highly unsafe. It is thus important to identify suitable safety and health management activities and strategy, accommodating potential serious S & H problems.

1.2. Statement of the Problem

The development industry is partitioned into three major portions. Development of buildings, temporary workers or common temporary workers builds private, mechanical, commercial, and other buildings. (Dadzie, 2013). Every year, all through the world, an assessed number of 271 million individuals endure with work-related wounds, and 2 million kick the bucket as a result of Lack of taking safety and health measures.

The assessed financial misfortune caused by work-related injuries was proportionate to 4 % of the world's net national item. (Eijkman, 2003). The development industry, utilizing the biggest labor constrain, has accounted for almost 11% of all work related wounds and 20% passing's coming about from work related mishaps. Worldwide labor organization gauges that at slightest 60,000 fatalities happen at development locales around the world each year.

This implies that one deadly mishap happens each ten minutes within the division. Most of these mishaps are made due to risky behavior and risky conditions, (Mouleeswaran, 2015). Hence, safety and health management practices in construction buildings are the major and around the world issue which needs solid thought since it influences the life of the laborers (labor), project time, venture taken a toll conjointly extend quality. Be that as it may security thought in development building may has may has not however been examined and assessed as issue in Ethiopia.

Variety of studies, have investigated the construction safety and health within developed countries. In the majority of these studies, researchers have either developed a new framework model or replicated an already tested one with a view to improving its adequacy. However, there is a lack of

research in this area in the context of developing countries with specific requirements. Although much research has been directed at safety and health, very little is concerned with the Ethiopia and the particular characteristics of health and safety management practice in their environment. (Alhajeri, 2011).

Some prior studies were conducted on evaluation of Safety and Health practice in building construction in Addis Ababa. From practice and experience in the construction industry, injuries and fatalities resulted from accidents in the construction industry are still an obstacle in the building constructions and to identify which phase of building construction need more focus or emphasis of health and safety management practice.

According to the Addis Ababa construction office report, during 2016/17 as examined public construction project more than 10 workers were died due to unsafe practice of construction. Consequently, Addis Ababa fire protection agency has been mentioned the construction disaster that of more than 42 construction professionals were disabled and passed away because of involving unsafe practice during the year of 2015-2016/17.

An assortment of considers, studies have explored the development of wellbeing and security inside created nations (Tariku, 2014). Within the larger part of these considers, analysts have either created a modern system show or reproduced and moving forward its ampleness. But from practice and experience in the construction industry, injuries and fatalities resulted from accidents in the construction industry still are an obstacle in the building constructions. So, my research was conducted to assess the practice of building construction safety and health management in Taurus construction. The research was conducted to fill the following gaps:

Other researchers conducted in the previous studies were focused on the safety and health issues rather than assessing the management practices (Alhajeri, 2011). However, this research was focused on assessing the safety and health management practices of the construction company. **Moreover,** the previous researches had used descriptive research designs (Mouleeswaran, 2015), but this research incorporated both descriptive and explanatory research designs with both qualitative and quantitative research approaches. Hence, the research was conducted to fill this research gaps.

1.3. Objectives of the Study

1.3.1. General objective

The general objective of this research was to assess the health and management practice of Taurus construction plc.

1.3.2. Specific objectives

To identify the safety and health management strategies of the construction company.

To identify the challenges of safety and health management practice of Taurus Construction plc.

To identify the challenges of safety and health management practice of Taurus Construction plc.

1.4. Research Questions

1.What are the safety and health management strategies of the construction company?

2.What are the challenges of safety and health management practices of Taurus construction plc?

3.What are the challenges of safety and health management practices of Taurus construction plc

1.5. Significance of the Study

The importance of the study stems from the need to develop an understanding and investigation of the problems of safety and health management practices in Taurus construction plc. The study would be an input for:

- The construction company to utilize the study to take more safety measures based on the finding.
- Paving the ways to assess more safety and health management measures.
- The study would be an input for Addis Ababa city administration to indicate safety and health management strategies.
- Researchers and academicians will use it as reference and bench mark for further studies.

1.6. Scope of the study

Thematically, the thematic focus of the study was rest on assessing the safety and health management practice of Taurus construction plc.

Geographically, this study was conducted in Addis Ababa. The research site was selected due to the availability of construction sites of the company in Bole

Methodologically, this study utilized descriptive and explanatory research designs with mixed research approaches and the analysis was made based on the data collected through cross-sectional.

Periodically, the data was collected from workers and managers who have been working in the company in February, 2016 in Ethiopian fiscal year.

1.7. Operational definitions

Safety: The operational definition of safety is the state of being safe; freedom from the occurrence or risk of injury, danger, or damage in the construction company while performing its construction projects.

Health: is a state of complete physical, mental and social well-being and working environment well-being in relation to the working condition of the workers in the construction project sites.

Health management: embraces a holistic vision of health, in which health is impacted by behavioral, social, physical and environmental determinants. Health management includes and goes beyond healthcare management, but includes the safety and security of employees in different working environments.

Safety and health management Practice: Safety management is the procedure used to recognize S & H risks and implement actions to decrease the possibility of a risk materializing and to diminish or eliminate the potential consequences of identified project.

1.8. Limitation of the study

In this study, different limitations have been encountered and among these limitations, time and budget scarcity, lack of adequate data, unwillingness of the management team to forward information and the absence of informant interviewee for conducting an interview on time to collect the necessary data were the limitations of this study.

1.9 Organization of the paper

The study was organized into five chapters. The first chapter included the introductory part of the study including background of the study, statement of the problem, general and specific objectives, and research questions, significance of the study, scope of the study, operational definitions of terms, and limitations of the study and organizations of the study. The second chapter incorporated theoretical and empirical reviews, research gaps and conceptual framework of the study. Under the third chapter, methodology of the study was elaborated, and in the fourth chapter the collected data

was analyzed, and finally in the final chapter summary of key findings, conclusion, recommendation, and areas for further research were addressed.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Theoretical Review

The practice of health and safety management system in reducing workplace hazards in Tanzania manufacturing industries (ILO-OSH, 2013). Furthermore, workplace hazards may be caused by the nature of work like lifting heavy materials and the nature of work stations and work content, as well as working period that may results to boredom and fatigue (Alli, 2010).

Management of safety and health at workplace should apply all means to ensure that accidents, injuries and work related diseases are minimized. This is because they cost employees, organizations, communities and the nations at large (Amponsah-tawiah & Mensah, 2016). According to Robson et al. (2007), safety and health management system (SHMP) is a combination of related and connected elements that establish and control health and safety policy, objectives and other related elements. Also, the SHMP is the negotiated organizational management system that involves integrated specific elements that improve safety and health at workplace (Gujrath, Kale & Samir, 2013). According to Widodo (2017), SHMP involves the structure of the organization, planning, responsibilities, implementation and procedures (Jingjing, 2020). Also, it is a process and all resources to develop, implement, maintain and review health and safety policies, procedures and guidelines with the aim of ensuring safe, efficient and productive workplace organization (Christensen, 2020). SHMP means all guidelines, programmes and administrations concerning occupational health and safety at workplace.

Domino Theory explains that accidents and injuries are caused by unsafe conditions or unsafe acts (e.g., working environment at workplace). These unsafe conditions or unsafe acts will be catalyzed if safety and health guidelines, programs and administration act passive in the next event series like person fault and unsafe act or conditions. Eventually, workplace hazards, that is accidents, injuries and work related diseases will occur (Ghasemi 2013). However, safety and health guidelines (regulations and policies) programs (training and inspection) and administration (involvement of employees and the use of proper personal protective equipment) in working environment reduce workplace accidents, injuries and work related diseases (Hosseinian, 2012).

In managing dominoes from falling over that cause workplace accidents, injuries and work related diseases, the organizations and government have to establish health and safety laws, rules and regulations and conduct health and safety training on inspection and awareness. Furthermore, the government and organizations have to involve employees in managing health and University of Dar eselam safety issues, ensure the availability of protective equipment that can be used during working periods (Hosseinian, 2012).

2.1.1 Definitions of safety, health and safety managements

Safety: - is related to external threats, and the perception of being sheltered from threats. According to 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 by accident.

According to Davis, safety is defined as freedom from any dangers of risk (Davis, 1999). Safety also can be defined as absence of danger, a state of protection and condition not involving risk (Lingard, 2005). Construction site safety is a self-explanatory that the environment or condition of construction which is safe enough for the construction participants to perform their particular duties and tasks safely (Jannadi, & Bu-Khamsin, 2002).

Health: - is the general condition of a person in mind, body and spirit, usually meaning to be free from illness, injury or pain. The World 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).

Safety and health management practices are concerned with the development, promotion, and maintenance of the work environment, arrangements and programs that guarantee the mental, physical, and emotional well-being of workers, as well as keeping the work environment. Generally, it is free from real or potential risks that may harm workers relatively free from actual or potential hazards that could injure employees (Chinniah, 2015).

Safety and health management practice is deals with the practice of work related safety and saved from diseases, injury and the promotion of the safety and health among the workers'. It aims at the improvement of working condition and environment.

Safety and H (SH) in construction companies is for the most part characterized as the science of the expectation, acknowledgment, assessment and control of risks emerging in or from the working

environment that might impede the health and well-being of laborers, taking into account the possible impact on the surrounding communities and the general environment. Safety defined as the fact of being free from danger or risk or to take safety precaution or safety measures to make sure something safe (dictionary of human resource and personnel management, 2003).

2.1.2. Global Situation of Safety and Health Management Practices in Construction Sites

Safety and health management always grave concern for both practitioners and researchers all over the world. Thus, construction has been regarded as the most hazardous place in which to work with a high level of health and safety risks (ILO, 2005). ILO estimates that at least 60,000 fatal accidents happen in a year on construction sites around the world, which is one in six of all fatal work-related accidents due to improper management of health and safety management practices. In the same vein, safety and health management practices presented by different researchers (Lingered and Rowlison, 2008) revealed that, the injury and fatality rate in construction projects is very high in comparison with other sectors of industry in the majority of countries. Moreover, it has been acknowledged that 25–40% of fatalities in the worlds are contributed to absence of proper safety and health management practices in construction sites (ILO 2005). Based on fatality statistics, different countries showed that the construction industry produces 30% of fatal industrial accidents across the European Union (EU), yet it employs only 10% of the working population. In the United States of America (USA), the sector accounts for 20% of fatal accidents and only 5% of employment, and in Japan construction fatalities account for 30-40% of industrial fatal accidents (ILO, 2005). In the developing world, the risks associated with construction work safety and health management practices are much higher. In comparison with developed countries, construction safety and health management practices in developing countries are ten times more dangerous (Hamalinen, 2006). Other research conducted in developing countries corroborates evidence of this relatively low proportion of safety and health management practice on construction projects.

2.1.3. Safety and health management practices in the construction industry

The overall construction industry is still looking at positive way to change to a safer working environment with the influence of everyone's concern not just the workers or individuals (Hinzer, 1996). Kunju (2000), states that safety should look beyond accidents and more towards human behaviors and culture and he also said that measurement would enable comparison and benchmarking of performance and track progress from time to time. Once the principle and the practice of measurement become the norm, this will facilitate the transformation of motivations, attitudes and choices in every construction company.

On the other hand, Anderson (1992) states that proactive safety performance is assured by providing the following ; having plant and equipment which is fit for the purpose of reducing risks from identified hazards as far as is reasonably practicable; system and procedure to operate and maintain equipment in a satisfactory manner and to manage all associated activates; and People who are competent, through knowledge, skills and attitude operate the plant and equipment and to implement the system and procedure.

Liska (1993) has introduced the concept of zero accident techniques as follows; safety planning including goals, personnel, policies and procedures; fire protection programmers and safety budget; safety training and orientations; safety incentives; alcohol abuse programmers; proper record keeping and follow up; regular safety meetings; personal protective equipment. Other safety measures include; a comprehensive safety policy statement; a review of construct ability; reliable contractor screening pre-construction meeting (Safety review); inspection; good housekeeping.

2.1.4. Health and safety challenges in developing countries

Approximately 45% of the world’s population and 58% of the population over 10 years of age belong to the global workforce, i.e. 60-70% of the adult male and 30-60% of the adult female population of the world (Chandrasekhar, 2011). There is a wide variation in economic structures, occupational structures, working conditions, work environment, and the health status of workers in different regions of the world, in different countries and in different sectors of the economy. Therefore, the mechanization of the construction industry is not uniform throughout the world. However, as stated earlier, the construction industry plays a vital role in boosting the economy of any country, especially developing countries. It provides the infrastructure required for other sectors of the economy to flourish. 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, 2013)

The large proportion of seasonal and migrant workers (1998) found that, in most developing countries, for example like India, there are no training programs for staff and workers; therefore, no orientation for new staff or workers is conducted; hazards are not pointed out; and no safety meetings are held. Employees are expected to learn from their own mistakes and experience.

In adopting different approaches to safety and health in developed and developing countries, two main differences can be identified. The first is the existence of legislation and its effective implementation; the second is hazard awareness. In developed countries, many safety acts and legislation exist and are implemented effectively. Nominated safety officers promote hazard awareness with the help of regular safety training sessions. In developing countries, however, safety rules barely exist at all; and when they do, they are inappropriate, ineffective, out-of date and based on conditions that prevailed while the country was still being colonized. Additionally, the regulatory authority is usually very weak in implementing rules effectively, and work hazards are either not perceived at all, or perceived to be less dangerous than they actually are (Larcher , 2016)

In Ethiopia, the construction sector is a major contributor to the Ethiopian economy and it's one of the fastest-growing sectors. Adane (2013) said 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. In any case, all these construction activities are carried out by incompetent labor strengths at cheap rate. Work related wounds and mischances among these laborers are tall due to absence of education, destitution, need of well-being and security preparing and data on wellbeing risks and dangers at the work put. Such workers are known to face rapidly changing workplaces, a high degree of competition and attacks of unemployment.

As the emerging sector of Ethiopian economy, the status of the construction workers particularly their safety. The safety Condition ought to be given accentuation and the security of the working environment ought to be kept up. In show disdain toward of the noteworthy rate of increase within the industry over the past decades, as it were few ponders have been conducted to investigate the occupational safety and health status of workers working in the construction industry (Hanna, 2016).

Therefore, in developing countries health and safety management practices by construction workers are less than those in industrial countries. The impact is also 10 to 20 times higher in these counties, where the greatest concentration of the world's workforce is located (Dong, 2005).

unsafe working environments are the major cause of most workplace injuries, individual related factors such as young age, lack of formal education, lack of experience, job dissatisfaction, lack of physical exercise, extended working hours, night work and non-use of personal protective equipment are important factor (Wong, 1994). About three-fifth of building personnel are not positive whether they have to put on protecting tools on the building site. They felt that it is not convenient and tight when wearing defensive tools at work (griffin and Neal, 2000).

2.1.5. Construction safety and health management practices in Ethiopian context

Safety and health of construction workers in Ethiopia is found to be poor. This is mainly due to the poor workers relationships and lack of safety measures. Safety measures are nonexistent in the construction sites; therefore, workers are exposed to different kinds of work related hazards. Most of the injured workers did not receive compensation because of triangular employment arrangements between the building contractors and subcontractors' which obscure lines of liability (Limenih, 2010).

Injuries generally are unreported; however, if necessary, a laborer might receive first aid or preliminary medical care. In most cases, specialized medical treatment or compensation is unavailable. Workers themselves consider accidents due to their own negligence, and accept that construction is a dangerous occupation. Nevertheless, major accidents involving the death of a worker may be report due to the financial expenses and litigation that could be involved. Some informal assessments identified a few major reasons for safety non-performance which included: lack of development in construction sectors in the shape of mechanization and industrialization; lack of professional construction management practices, inadequate safety provisions laid by the existing regulatory environment which has failed to establish safety as a major industry objective, insufficient and incentive-less insurance mechanisms which have failed to establish safety as a business survival issue, and unfavorable business environment which has led to adversarial business relationships among stakeholders resulting in controversies, conflicts, claims and litigation and hence diverting the focus away from issues like safety (Farooqui , 2007).

2.2. Empirical Review

There is very little literature relating directly to the safety and health management practices on construction sites in developing countries like Ethiopia. Existing publications tend to suggest how accidents may be prevented but assume that a strong regulatory body exists to enforce legislation (Sohail and Kolsky, 1999). Though most of the existing studies were conducted in developed countries, their findings will be applicable in most situations in the developing nations as well.

Helander (1991) analyzed the causes of 739 construction fatality accidents that occurred in the UK. He found that fifty-two percent of them occurred due to falls from roofs, scaffolds and ladders. Falling objects and material were involved in 19.4 per cent of the deaths, and transportation equipment, (e.g. excavators and dumpers) were involved in 18.5 percent. Helander also found that 5 percent of construction accidents occur during excavation work. The categories used for classifying fatal accidents were: falls, falling material and objects, electrical hazards, transport and mobile plants, and other. The majority of accidents that involved falls occur during work on roofs, scaffolds and ladders. Collapses of structures and falling materials also account for a large proportion of fatalities. Many of the safety hazards are specific to the different trades, and typically construction workers underestimate the hazards in their own work which affects the motivation for adopting safe work procedures. The establishment and use of procedures and regulations to enhance safety can avoid a large proportion of these accidents. Helander (1991) finally suggested that top managers can contribute to reducing the number of accidents if they: Note the safety records of all their field managers and give these figures the same importance as productivity and overall cost, communicate safety issues to staff along with cost and timing issues, develop mechanisms for allocation of safety costs, ensure through improved planning that equipment and materials required for safe working are available on site.

Construction processes in Kenya are characterized by unsafe practices leading to accident that leaves severe consequences on both the project and the workers. Accidents in building construction sites, whether minor or fatal could result to injuries, loss of resources, partial or permanent disability and death in case of fatalities. The paper explores the class of workers that are mainly responsible for construction accidents, the factors that causes accidents and the types of accidents that is been encountered in building construction sites and the frequency of their occurrence. It was achieved through the review of existing (Daniel, 2015)

According to Seifedin (2014), the findings indicate that the overall safety and health condition in the Ethiopian construction industry is very poor. In addition, there is very low level of implementation of safety and health standards, rule and policies in the construction companies. Little training and orientation on safety and health management practice was given to employees. Most of the construction companies do not have safety and health management strategies, policies, safety officer, health and safety committee, hazard identification and reporting program, and properly placed safety signs. Based on the responses obtained from engineers/foremen, poor working conditions and lack of personal protective equipment were the main causes of accidents in the construction sector. On the other hand, foot and hand injuries, and falling from heights are the more frequently occurring types of accidents in the industry.

Safety management in developing countries in particular is often at much lower levels mainly due to an absence of strict safety regulations. In developing countries, safety and health management rules hardly exist and can often not work appropriately and effectively. This problem is generally due to the lack of commitment of the authorities in implementing safety rules and programs (Hinze 1997). Some research findings from developing countries also apply to Ethiopian construction sites. Kartam (2000) have observed, at Kuwaiti construction sites, that the problems arise due to disorganized labor, poor accident record-keeping and reporting systems, extensive use unskilled laborers, a lack of safety regulations and legislation, the low priority given to safety, the small size of most construction firms, and competitive tendering. Tam (2004), conclude from their research of Chinese construction companies that the main factors affecting safety performance include top management's poor safety awareness, lack of training, project managers" poor safety awareness, reluctance to input resources for safety, and reckless operations. One study in Taiwan (Cheng 2010) also identified problems that included not valuing the importance of safety measures implemented at workplaces, not giving sufficient safety education to new workers, and not hiring well-trained safety personnel to implement safety measures.

2.2.1. Approaches to safety and health management practices

Seventy to ninety per cent of accidents are caused by unsafe behavior. A number of theories have linked accidents to the failure of persons (by their actions or omissions) in the accident chain to avert accidents (Adams,1976). These explanations have therefore formed the basis of psychological approaches to

safety and health management which have as their aim, the modification of behavior so as to break the chain of events leading to most accidents.

Duff (1994) reported on safety and health management practices used in improving construction site safety. The authors of the study used a combination of goal-setting and feedback to influence the behavior of site operatives. The findings of the study suggested that goal setting and feedback can greatly enhance health and safety performance. Duff (1998) has pointed out that behavioral methods should not be restricted to site operatives but could be extended to include site management staff and senior corporate management. Lingered and Rawlinson (1994) examined the effectiveness of the goal-setting and feedback approach in the honk Kong construction industry. It was found that labor commitments to the group and to the organization are intervening variables in the application of behavioral techniques.

2.2.2. Integration of safety and health management practices in construction works

Studies in construction accidents suggested many accidents on construction sites could be prevented by taking appropriate safety measures in all phases of the project life. Thus, participants in projects have a role to play in improving the safety and health performance of construction sites and completed projects. Current thought on safety and health in construction put emphasis on integrating safety and health management practices into the entire construction process. This view of health and safety management is, at least to some extent, largely driven by developments in safety and health legislations (Adams, 1976).

The practice of safety and health management in construction processes requires responsibility for safety and health to be equitably shared between the key participants in a construction project. This view therefore requires project participants to "think safety and health" throughout the phases of a project (Sources). AsHinze (1998) has emphasized, addressing the safety of construction workers in the design phase involves recognizing the potential impact designers‟ decisions can have on the safety and health of construction site workers. Similarly, owners' involvement in construction safety could reduce cost of safety to minimum risks.

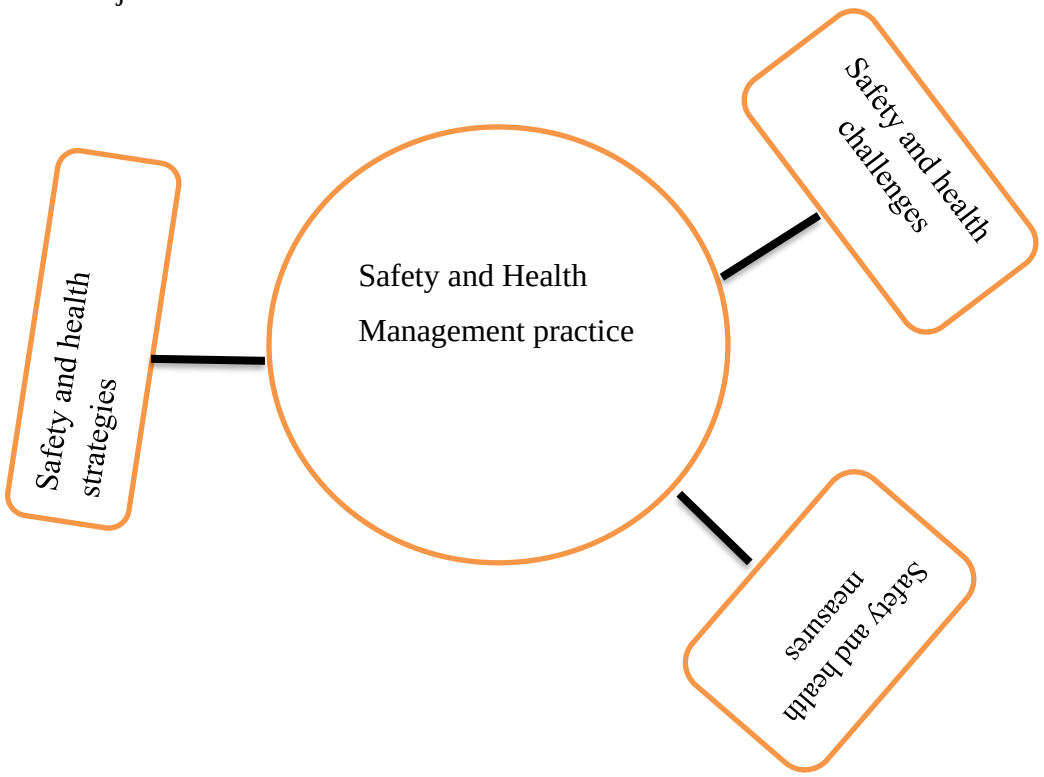
2.3. Research Gaps

The previous researches done on safety and health management lacks proper applications of research methodologies (Daniel, 2015). The researches which were assessed in the empirical review literature

part assessed that the results of not practicing safety and health management strategies, but none of the studies portrayed the effects of the mentioned variables on the health and safety management strategies of the construction sectors (Rawlinson, 1994). The previous studies were also not depicted the scope of the studies, the statements of the problems assessed did not indicated the research gaps that the researchers aimed to fill.

2.4. Conceptual Frame Work

Figure1: - Conceptual Frame Work for Safety and Health Management Practice in Building Construction Project of Taurus Construction.



CHAPTER THREE

RESEARCH METHODOLOGY

Description of the Study Area

This study was carried out in Taurus construction project which is located in Addis Ababa. Taurus Construction was founded in 2015 and has established itself as a reputable builder of modern, affordable and commercial apartments in Addis Ababa. The company has a team of experienced architects, engineers, and construction professionals who are committed to deliver projects on time and to the highest standards. Currently, the company has different project sites in urael and Denbel Bole with 53 permanent employees and workers.

3.1. Research Design

According to John W. Creswell (2009), research designs are the plans and the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. The research design of this research embodies descriptive and explanatory type of research methods. The rationale for the choice of descriptive method is the fact that descriptive studies are used in order to describe the state of affairs that exists at present times in describing the current living status of the safety and health management practices of the construction company (Kahun, 2003). It was partly explanatory because it shows relationship and effects of the independent variables on the dependent one.

3.2. Research Approach

Both and qualitative approaches were used in this study. The mixed usage of the approaches would enable the researcher to triangulate the quantitative and qualitative data items which were collected from interview and from questionnaire respectively and the usage of this research approach enabled the researcher to analyze of quantitative data out puts. These days, the combination usage of the two approaches in mixed manner becomes the most habitual approach of analyzing the collected data both verbally and in question forms.

3.3. Types of Data

Both primary and secondary data was used in the research. Primary data was the data collected from the cases under study. Primary data is an original and unique data that is directly collected by the researcher from first hand sources. Primary data was collected from the managers of the company and fro workers. Secondary data refers to the data which has already been collected for a certain purpose and documented somewhere else. Secondary data was collected for the research from annual reports, different journals and periodicals published on the case under study.

3.4 Sources of Data

The study used both primary and secondary data sources. The study utilized cross-sectional survey data in the sense that all relevant data was collected at a single point in time. Obtaining information from a cross-section of a population at a single point in time is a reasonable strategy for pursuing many descriptive researches (Janet, 2006:94). Primary data was collected through questionnaire and interview while Secondary data was collected from document reviews and reports of the construction company.

3.5. Sampling Design

3.5.1. Target Population and Sampling Unit

The target population of this study was those managers and workers who have been permanently employed in the Taurus Construction. The target population of the study was 56 management teams and permanent workers who are working at different sites of the construction company and in different levels of responsibilities. The sampling unites of the research were 56 permanent employees and management teams who are currently recorded in the construction sites of the (Taurus Construction) construction company.

3.5.2. Sampling Techniques

Taking a sample from a population is a normal process that enables us to save time and resources. Sampling techniques provide a range of methods to reduce the amount of data needed for a study by considering only data from sub-groups rather than all possible elements (Saunders, 2009). According to Saunders (2009), there exist two types of sampling techniques: probability and purposive non-probability sampling techniques. However, in this study is used due to the fact that the target

population of the study is 56. If the target population of the study is less than 200, it is advisable to take the target population as a sample and survey method is used to collect the data.

3.5.3. Data Collection instruments

Questionnaires were used as a primary data source for quantitative data gathering. It is designed to enable the researcher to obtain detailed information as much as possible. The questionnaires consisted of structured closed-ended questions to obtain quantitative data

The questionnaire consisted of different items out of which most items were used to assess the safety and health management practices, the challenges safety and health management practices of the construction company, and the safety and health measures taken by the construction company.

I also used open ended questions were administered by the researcher in interviewing the office the different managers of the construction company who have been assigned to manage the different departments of the construction company. In fact, the researcher duly noted that there was difficulty in getting that interviewee since most of them were busy by urgent duties than workers. Three interviewees were selected according to their availability in the office and the project sites.

Secondary data is information that can be collected and organized by someone. Secondary data helps the researcher to get supportive information on the selected topic (C.R.Kothari, 2004). Secondary data was gathered from document analysis and similar researches done in other construction companies.

3.6. Methods of Data Analysis

Depending on the research approach, quantitative data analysis technique was employed to analyze the collected data. Descriptive data analysis techniques including frequency were used and the data was presented through tables and graphs.

3.7. Reliability Tests

Reliability is the extent of how reliable is the said measurement model in measuring the intended latent construct. The values of Cronbach's alpha above 0.7 are considered acceptable and those above 0.8 are considered meritorious (Nunnally, 1978; Litwin, 1995). Reliability was assessed for each dimension of independent and dependent variables as follows.

Table 3.1. Reliability test Result

Variables	Cronbach's Alpha	Number of Items
Safety and health measures	0.799	6
Safety and health strategies	0.896	5
Safety and health challenges	0.984	5
Safety and health management practices	0.877	7

Source: reliability test result

As shown in table 3.1, the results of all dimensions were above 0.7 which indicated that the data was reliable and acceptable.

To ensure validity of instruments in the current study, tested instruments in previous studies are adopted.

3.8. Ethical Consideration

Before administering the questionnaire to the respondents, prior arrangement was made with the concerned body of the construction company's managers and project leaders on the date and time to administer the questionnaire to the workers to assess the practice of safety and health management practices in the construction sites. The confidentiality and security of the data as well as the privacy of the respondents kept confidentially. The respondents were also oriented to withdraw at any time if they feel any discomfort.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

In his chapter, respondents' response rate, respondent's demographic profiles, descriptive analysis of variables, correlation and regression analysis and discussions of findings were presented.

4.1. Respondents' Response Rate

Table 1 Respondents' Response Rate

S/No	Items	Frequency	Percentage
1.	Returned questionnaire	53	100%
2.	Non-returned questionnaire	0	0%
3.	Total	53	100%

Data collection tool	Interviewees	answered	un answered	Interviewee's rate%
Interview	3	3	-	100

Source: own survey data (2023)

Out of the targeted 53 sample respondents, 53 complete responses were obtained from the sample respondents with a response rate of 100 %. This response rate is representative of the population and conforms to O. Mugenda and A. Mugenda (2003) requirement that a response rate of 100% and above is very good, 60% is good and 50% is adequate. Accordingly, 100 % response rate was considered as very good for further analysis. From 3 interviewee mentioned in the above table, 3 of them were asked to forward their idea about the issue under study.

4.2. Respondents' Demographic Profile

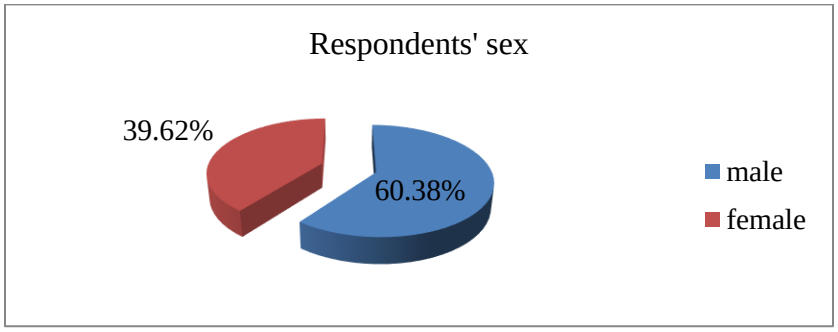


Figure 1 Respondent's sex ratio

Source: own survey data (2024)

The above figure depicted that out of 53 respondents, 60.38% were male and 39.62 % were female employees. This data implied that there is gender proportion inequity in the construction sector as the numbers of female engaged in the construction sector are very small as compared to number of male employees working in the construction company.

Thus, this data result enables the construction company management teams to make proportional ratio between male and female construction workers and management teams in the company's different construction sites.

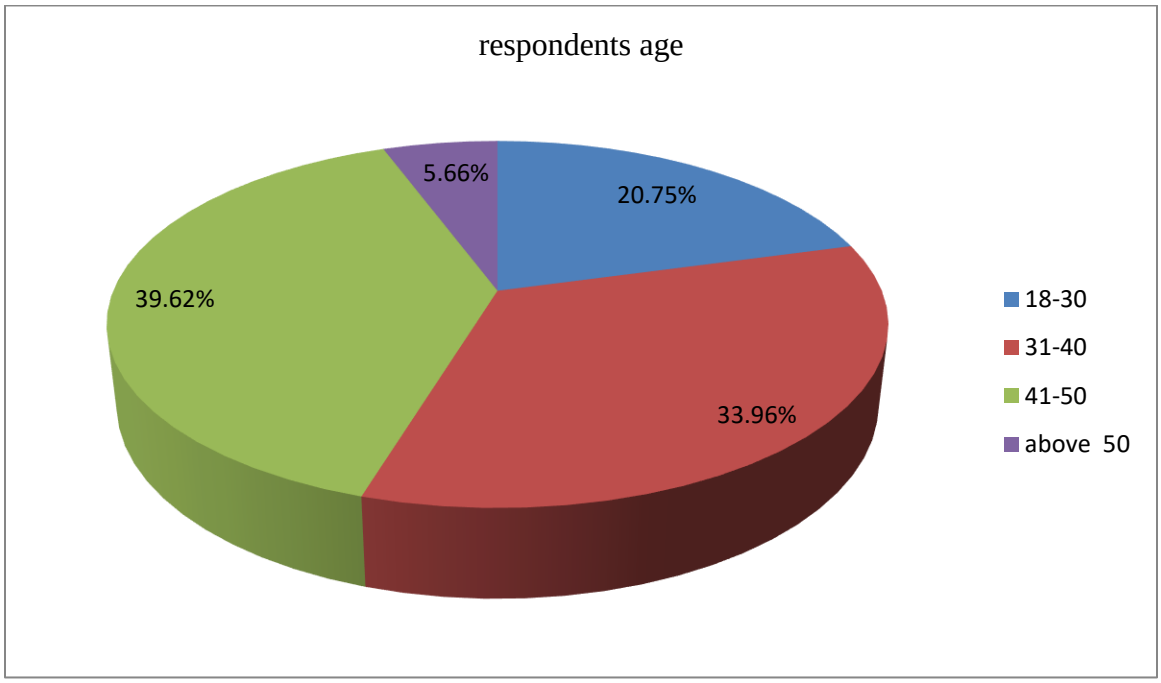


Figure 2 Respondents' age

Source: Own survey data (2024)

With regard to age of respondents, 5.66% were above 50 years, 20.75 % were 18-30 years, and 33% were 31-40 years. From this data, we can understand that majority of the employees in the construction company were adults. The data implied that majority of the employees in the construction site are mature in managing different activities in different construction sites of the construction company.

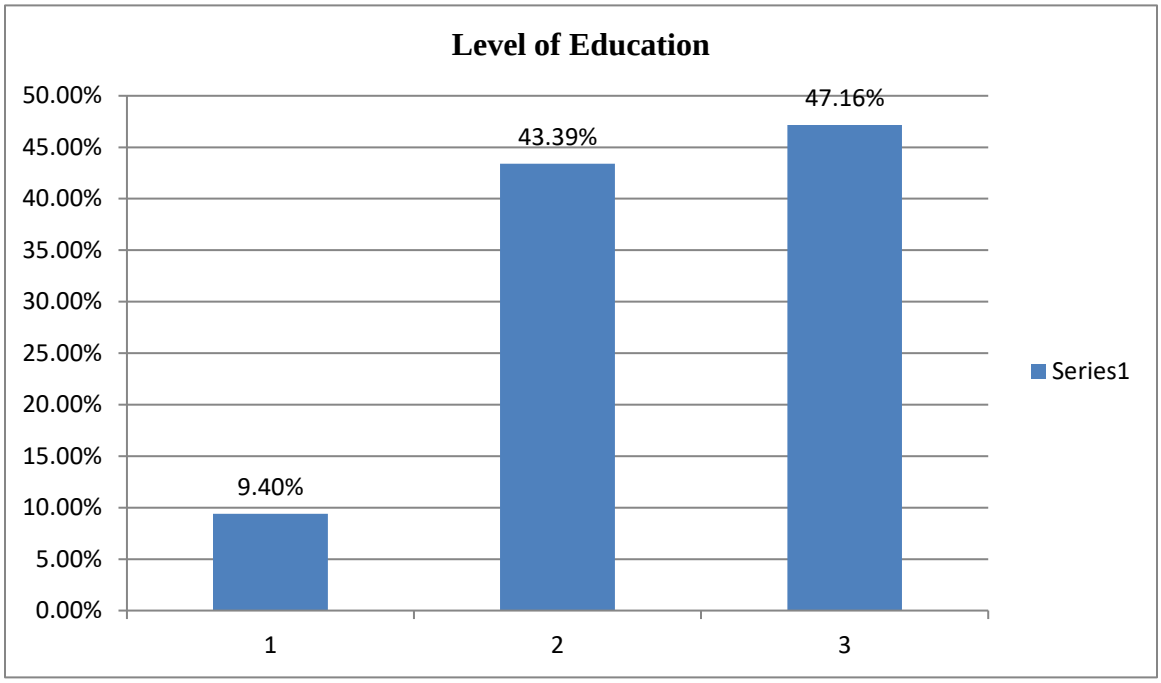


Figure 3 Respondents level of education

Source: Own survey data (2024)

In relation to respondents' education status, 9.4 % of the respondents had diploma, 43.39 % of the respondents were first degree holders and 47.16% of the respondents were second degree holders. The data of this research implied that majority of the employees in the construction company were second degree and first degree holders respectively. This data enabled us to recognize about the employees of the company as they would be equipped with the necessary knowledge and skills about the safety and health management practices of the construction company in its different sites.

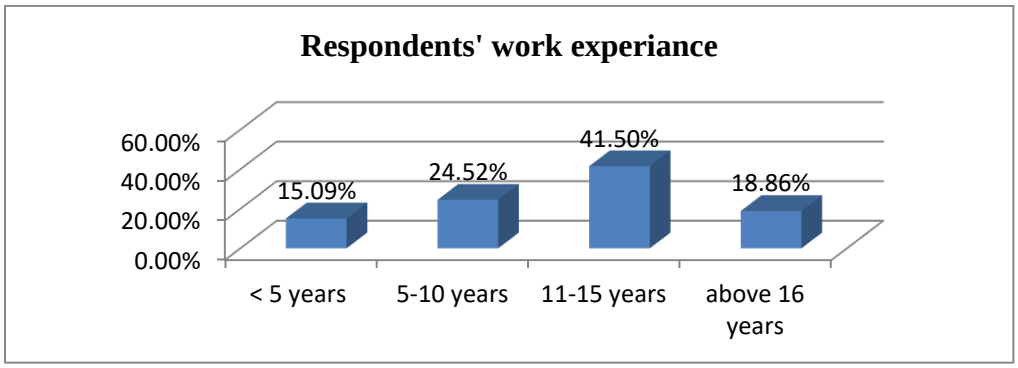


Figure 4 Respondents' work experience

Source: Own survey data (2024)

As we observe from the above bar graph, 15.09 % of the respondents have had less than five years of work experience, 24.52 % of the respondents have had five to ten years work experience, 41.5% of the respondents have had eleven to fifteen years of work experience and 18.86% of the respondents have had above sixteen years of work experience. As we recognize from the above data, majority of the respondents have had 11-15 years of work experience in the construction sector. This data implied that majority of the respondents have had enough awareness about the safety and health management practices in the construction company of its different sites. We can also fill confidence about the maturity of the data in providing rich information about the safety and health management practices of the construction sector of Taurus construction.

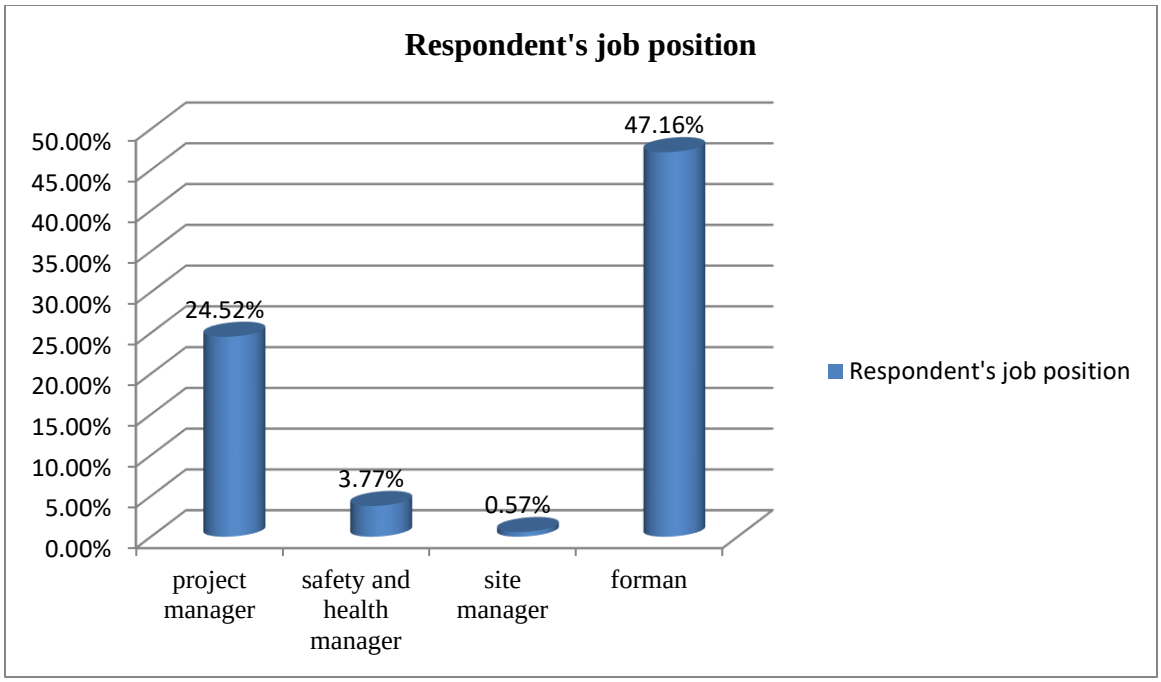


Figure 5 Respondents job position

Source: Own survey data (2024)

The above clustered cylinder depicted that respondents' job position in the construction sites. Based on the data presented in the above graph, about 0.57 % of the employees in the construction company were site managers, 3.77% of the respondents/employees of the construction company were safety and health managers, 24.52% of the respondents were project managers and the remaining 47.16% of the respondents were workers. This data indicated that the construction company has few numbers of safety and health managers.

4.2. Results of Descriptive Statistics

Table 4.2. Results of Descriptive Statistics

Statements	Level Agreement					Mean	Std. Deviation
	SDA	**DA**	**NUE**	**A**	**SA**		
	F & %	F & %	F & %	F & %	F & %		
Safety and Health Measures							
1. The workers use safety and health protective equipment.	19(35.8)	26(49.1)	8(15.1)	-	-		
2. Safety and health protective equipment are easily available.	1(1.9)	5(9.4)	20(37.7)	**27(50.9)**			
3.The workers get rapid treatment for the injuries they face at the work place	-	-	-	**29(54.7)**	24(45.3)		
4. Safety and health protective equipment are verified in standards.	4(7.5)	9(17)	15(47.2)	**25(28.3)**	-		
5. There are adequate first aid and first aider(s) on the construction projects/sites	17(32.1)	9(17)	-	**24(45.3**	3(5.7)	**3.861**	**1.714**
6. The workers get safety and health materials as they need.	-	-	11(20.8)	**32(80.4**)	10(18.9)		
Safety and Health Management Strategies.							
1. The managers check the application of safety and health management rules.	3(5.7)	6(11.3)	2(3.8)	**29(54.7**	13(24.5)		
2. The company adopts different safety and health rules.	-	-	-	**45(84.9)**	8(15.09)	**3.479**	**1.473**
3. The company rewards those Workers who properly apply safety and health management rules.	23(43.39)	**30(56.60)**	-	-	-		

4. There is training for new employees about safety and health management rules.	5(9.4)	8(15.1)	10(18.9)	**16(30.2)**	14(26.4)		
5. The construction company has safety and health management mechanism.	14(24.6)	9(17)	6(11.3)	**24(45.2)**	-		
Challenges of Safety and Health Management Practices							
1. There is task force negligence in the company in applying safety and health management measures.	-	-	-	**29(54.7)**	24(45.3)		
2. The managers are committed to implement safety and health management rules.	3(5.7)	6(11.3)	**29(54.7)**	-	15(28.3)	**2.906**	**0.526**
3. Unsuitable weather condition would affect the safety and health of the workers.	-	-	-	**28(52.8)**	25(47.2)		
4. The working sites of the company are free from different threats.	**21(39.6)**	17(32)	6(11.3)	6(11.3)	3(5.8)		
5. The working sites of the company are attractive and enabling.	10(18.6)	14(26.4)	6(11.3)	**15(28.3)**	8(15.09)		
Safety and Health Management Practices.							
1. The safety and health management strategies of the company are well-being oriented.	2(3.8)	13(24.5)	**29(54.7)**	3(5.7)	6(11.3)		
2. The company has implemented the safety and health management strategies in its construction sites.	13(24.52)	-	13(24.52)	**27(50.94)**	-		
3. The company actively monitor the Safety& Health performance of their projects	**27(5.9)**	14(26.4)	12(22.64)	-	-	**2.703**	**0.431**
4. The company encourages planned training of employees in Safety & Health issues.	**19(35.8)**	13(24.52)	-	11(20.75	10(18.5)		

5. The managers supervise and audit the safety and health management practice status regularly.	**30(56.6)**	23(43.4)	-	-	-		
6. The safety and health management practice of the company is improved time to time.	8(54.7)	9(16.98)	**27(32.07)**	8(15.09)	1(1.88)		
7. The managers directed their attention towards failure of their previous works in managing safety and health issues.	18(33.96)	**32(60.37)**	3(5.66)	-	-		

Source: Own Construction (2024)

This section of the analysis describes safety and health management measures, challenges of safety and health management, safety and health management strategies and the practice of safety and health in Taurus construction. Each item was described independently through using frequency and the average value of the item and interpreted through using mean and standard deviation values.

As we observed from the above table, majority of the respondents (49.1%) responded as the workers use the safety and health protective environments. 50.9% of the respondents responded as the safety and health protective equipment are easily available for the workers, 54.7% responded as the workers get rapid treatment when they face injury, 28.3% of the respondents stated as the company's' safety and health protective equipment are verified in its standards, 45.3% of the respondents responded as there are adequate first aid and aiders availability and 80.4% of the respondents responded as they would get safety and health materials when they want to get.

As it is revealed in the above table, safety and health measures has a mean value of 3.861 (SD=0.714). A five-point Likert scale of a questionnaire filled by respondents. According to Zaidation and Bagheris (2009) mean in the Five-Point Likert scale below 3.39 is low. A mean value ranging from 3.40 to 3.79 is moderate and a mean value greater than 3.8 is high. From the above table, we can observe that the mean value of safety and health measures is 3.861(Std. Deviation=0.714) revealed that the construction company is undertaking the necessary safety and health measures.

As we observed from the above table, majority of the respondents (54.7%) responded as the managers check the implementation of safety and health management rules, 84.9% of the respondents responded as the company adopt different safety and health rules, 56.603% of the respondents dis agreed as the company rewards those workers who properly apply safety and health rules, 30.2% of the respondents mentioned as there is training for new employees about safety and health management rules and 45.2% of the respondents describes as the construction company has good safety and health management strategies.

From the above table, we can observe that the mean value of safety and health management strategies is 3.479 (Std. Deviation=**1.473**) revealed that the construction company has been taking moderate level safety and health management strategies.

As we observe from the table above, majority of the respondents stated as there is task force negligence in applying safety and health management rules, the managers lack commitment to implement safety and health rules, unsuitable weather condition affects the safety and health of the workers and the working sites of the company lacks attractiveness.

From the above table, we can observe that the mean value of safety and health management challenges is 2.906 (Std. Deviation=0.526) revealed that the construction company has been facing safety and health management challenges.

As we observe from the table above, majority of the respondents were neutral in mentioning the well-being orienteers of the company, majority of the respondents agreed as the company has been implementing safety and health management practices, they mentioned as the company lacks active monitoring of the implementation of safety and health management practices, majority of the respondents stated as the company does not encourage planned training of safety and health implementation performances in its different sites, , majority of the respondents stated as the managers lack supervision and auditing of safety and health management practices and the managers did not directed their attention towards failure of their previous works in managing safety and health issues

From the above table, we can observe that the mean value of safety and health management practice is 2.703 (Std. Deviation=0.431) revealed that the construction company has low safety and health management practices in general

CHAPTER FIVE

SUMMARY, CONCLUSION, RECOMMENDATION

In this chapter, summary of findings for each research objectives, conclusion driven from study findings, recommendation of the study and areas for further research were discussed.

5. 1. Summary of key research findings

- ✓ Majority of the employees in the construction company were adult. The data implied that majority of the employees in the construction site are mature in managing different activities in different construction sites of the construction company.
- ✓ Majority of the employees in the construction company were second degree and first-degree holders respectively.
- ✓ Majority of the respondents have had 11-15 years of work experience in the construction sector. This data implied that majority of the respondents have had enough awareness about the safety and health management practices in the construction company.

✓ The construction company has few numbers of safety and health managers.

✓ The construction company is undertaking the necessary safety and health measures.

✓ The mean value of safety and health management strategies is 3.479 (Std. Deviation=**1.473**) revealed that the construction company has been taking moderate level safety and health management strategies.

✓ The mean value of safety and health management challenges is 2.906 (Std. Deviation=0.526) revealed that the construction company has been facing series safety and health management challenges.

✓ The mean value of safety and health management practice is 2.703 (Std. Deviation=0.431) revealed that the construction company has low safety and health management practices in general.

5.2. Conclusion

Based on the above findings, the researcher reached on the following conclusions:

According to the responses of the respondents, the construction company is undertaking safety and health measures with different safety and health strategies. But, implementing the safety and health rules has challenges and the practice of safety and health management is at the low level in the construction company.

5.3. Recommendations

Based on the above findings, the following recommendations were forwarded:

1. The management teams of the company should be committed in implementing the safety and health management rules of the company and the workers of the company should properly apply the safety and health rules and regulations of the company.
2. The company should strengthen the necessary measures of safety and health management rules and practices.
3. The company should solve the challenges and hindrances that could affect the safety and health management practices in its different sites.

5.4. Implications for Future Research

The following potential areas were suggested for future research:

- ❖ This study was focused on assessing the safety and health management practice of the construction company. Other researchers can examine similar researches with different research designs and methodologies.
- ❖ It would be significant if other researchers could conduct further researches through associating the safety and health management practices and productivity of the company.

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APPENDIX

ANNEX I-DATA COLLECTION INSTRUMENTS

Appendix I- Questionnaires for Employees

General Instruction

Dear respondents, there are **two** parts of questions to be completed by you in the subsequent sections. Thus, follow the specific instructions which are illustrated under each section and try to indicate your position that relatively represent your idea from the possible alternatives.

PART I: BACKGROUND INFORMATION

Please put "√" mark in the box below for your answer.

1. Sex? Male: ☐ Female: ☐

2. Age (years)? 18-30 ☐ -40 ☐ 41-50 ☐ >50 ☐

3. What is your educational status?

Diploma: ☐ Firs degree ☐ second degree ☐

4. What is your level of responsibility (job position??

Project manager ☐ Forman ☐

Safety and health manager ☐

Site manager ☐

PART II: Safety and Health Related Questions

For the following items, please indicate your response by putting a tick (√) mark in the number that describes best how you feel about each question.

Questions of safety and health management practice strategies.

	Respondents' Level of Agreement	

Statements	SDA	DA	NEU	A	SA
1.The construction company's workers properly apply safety and health management rules.					
2.The safety and health management strategies of the company are wellbeing oriented.					
3.The workers of the company are well informed about the safety and health management strategies.					
4.The company has implemented the safety and health management strategies in its construction sites.					
5. The company has enough safety and health protective work environment in its different sites.					

Questions which are related with the Challenges of safety and health management practices

Statements	Level of Agreement				
	SDA	DA	NEU	A	SA
1. Absence of safety and health management practice.					
2. Lack of top management commitment and support.					
3. Inadequate Personal Protective Equipment provision.					
4. Work force negligence and inexperience					
5. Unsuitable weather condition.					

Statements	Level of Agreement				
	SDA	DA	NEU	A	SA
1. Managers encourage and support worker participation, commitment and Involvement in Health &Safety activities					
2. Managers encourage and support training of employees in Health &Safety					

3. Managers actively monitor the Health &Safety performance of their projects					
4. Managers ensure that the Health & Safety budget is adequate					
5. There is adequate first aid and first aider(s) on the construction projects/sites					
6. The managers directed their attention towards failure of their previous works.					
7. The companies work environment is suitable for the workers.					
8. Work sites of the company have effects on practicing safety and health management strategies.					
9. The company has had taken safety and health measurements in its sites.					
10. The workers apply the safety and health rules and practices as they informed by their managers.					

Interview questions

1. How are the management team of the company lead the safety and health rules?
2. Did the construction company pay due attention for safety first principle?
3. What is the current status of safety and health management practice in the construction company?