

ASSESSMENT ON THE EFFECTIVENESS OF OCCUPATIONAL HEALTH AND SAFETY PREVENTIVE AND CONTROL MEASURES IN CONSTRUCTION PROJECTS IN IRINGA MUNICIPAL

***Simon Emmanuel¹**

Mishael Abduel²

Simon Emmanuel Institute of Accountancy Arusha
emmanuelstimon272@gmail.com

emmanuelmishael@gmail.com

ABSTRACT

The study evaluated the effectiveness of occupational health and safety preventive and control measures in construction project in Iringa Municipal. This study employed descriptive research design. Data were collected from 45 respondents. The study also used both primary and secondary data to gather information from the respondents. Quantitative data were analyzed using descriptive statistics such as frequencies, percentages, mean and standard deviation. Qualitative data were analyzed using content analysis. The study findings concluded that there were varying views on the challenges facing the county's construction workplaces in the implementation of the occupational safety and health practices in Iringa Municipal, lack of management commitment. It is recommended that monitoring bodies rarely conduct site inspections. Such bodies should be appropriately supported to give them capacity to monitor all industry players to ensure they provide a conducive working environment and adhere to statutory laws and regulations on health and safety, construction firms and project managers should be compelled to understand the safety and health laws and regulations through training accompanied with evidence. There should be an appropriate risk assessment in relation to the safety and health of employees and, on the basis of these results, adopt preventive and protective measures to ensure that under all conditions of their intended use, all chemicals, machinery, equipment, tools and process under the control of the employer are safe and without risk to health and comply with the requirements of safety and health provisions of OSHA and other regulations.

Key Words: occupational health, safety preventive and construction project

1.0 INTRODUCTION

Globally, the health and safety in construction sites has become an integral part of project success, this is so because the construction has been labelled to have the most dangerous working environment compared to other sector. According to (Adom, 2018) of the accidents that occurs in workplaces greater number of them happens in the construction industry because of its difficult and tough working conditions. It is ranked one of the most hazardous work environments that experience high number of workplace injuries and mortality rate (Adow, 2013) The safety and health of the construction industry has become paramount because the construction industry contributes to the socio-economic development of many nations through the provision of infrastructures and creating employment opportunities. Consequently, by implementing appropriate health and safety practices, it will create a safer, healthier and more pleasant working environment and reduce the risk of accidents not just to workers but the public. Giri (2020) opined that a good health and safety conditions in construction constitute a good and safe business practice and could significantly contribute to quality assurance, cost efficiency, environmental sustainability and better employee employer relationship and satisfaction

Occupational safety and health (OSH) also known as the occupational health and safety (OHS); is referred to as a multidisciplinary practiced concerned with the safety, health and welfare of people at work example in an occupation. The goal of occupational health and safety, programs are to foster safe and healthy environment and surroundings (Kessy, 2021). Occupation health and safety is a term that affects every organization through which they follow so as to inform and manage their strategies effectively. Moreover, it's termed as a basic human right that should be afforded to each and every worker, regardless of the nature of their work. Moreover, with OSH standards in place, workers are able to carry out their responsibilities in a safe and secured environment and soundings.

In the late 1970s an occupational safety and health Act was signed into law becoming the first law reaching federal laws in protecting the American workers that later spread across Europe to the other parts of the world. According to McKubre (2018) illustrated that workers should be protected from sickness, diseases and injuries that occurs from their work; through which the reality is very challenging to many workers: ILO found that around the world it's estimated that 2.78 million work related deaths occur every year and 2.4 million are related to occupational diseases. Changes in work places the population and the technology also the motivation towards a progressive development are creating challenges but also new opportunities to improve the well-being of workers. Technology, such as digitization, mechanization and robotics, can affect psychosocial health and increase other health risks, but it can also improve the well-being of the workers.

In spite of the establishment of Contractors Registration Board (CRB), The Occupational Health and Safety Authority (OSHA) and all efforts done by the Government to reform the construction industry; the construction industry poses more dangers concerning with health and safety than any other industry. Construction in Tanzania like in many countries in the world comes high in the comparative list of accidents and occupational diseases on construction sites as a result many workers in the country suffer serious injuries and ill-health because of bad and poor safety working conditions.

A researcher thinks what makes accidents and occupational diseases to occur is the contractors and consultants neglecting appropriate use of personal protective equipment and welfare facilities and how to implement the rules set by the Government to prevent accidents and spread of occupational diseases on sites.

Occupational health and safety are important factors in any organization (Manu, 2013). Occupational health and safety have been a very tough battle and problem for most of the contractors as they perform the preliminary planning on paper and win contracts but integrating the management of health and safety principles into the construction process that has become difficult because of the normal traditions and way they were used to performing their activities (Muhammadfam, 2017). According to Houran (2020) found that in Tanzania the management of occupational health and safety on Construction sites continues to be an area of concern; as workers have continued to blame the unsafe environment, unsafe surroundings, behavior and the increase number of accidents on construction sites. Although there are various legislation acts established in enforcing health and safety, poor agreement with such legislation is obvious; whereas statistics have shown the poor implementation of occupational safety and health (OSH) resulting to accepting different risks as payment for labor precariat (Abass, et al. 2018). These statistics and references indicate a problem on occupational safety and health in relation to construction activities. Henceforth this study aims at evaluating the effectiveness of occupational health and safety preventive and control measures in construction projects in I.

2.0 LITERATURE REVIEW

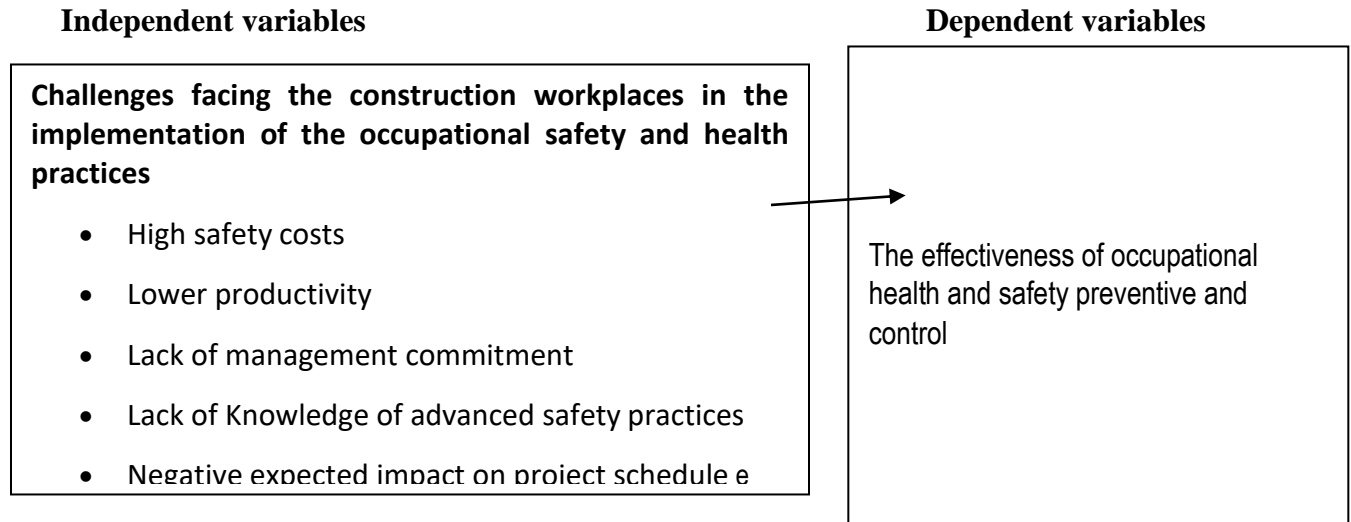
Empirical Literature Review

Giri, (2020) investigated on the s factors causing health and safety hazards at construction sites.in Nepal. Whereas the Construction industry is disposed to health and safety hazards. The study altered that the Construction workers should have the knowledge of health and safety and apply the knowledge while working. The main objective of this paper was to review and to identify the factors that cause accidents at construction sites and the methods to improve health and safety. The review revealed that lack of awareness about site safety and negligence of workers in wearing Personal Protective Equipment (PPE) were the main causes of poor safety practices. It is necessary to create employer's and contractor's interests in safety management and enhance awareness on possible risk factors to reduce these risk factors among workers. Effective implementation of training and safety awareness programs among construction workers is vital to improve health and safety of construction workers.

Calis &Buyukakinci, (2019) conducted a study on the occupational health and safety management systems applications and a system planning model. In Turkey. The study proclaims that Occupational health and safety activities are more simple, understandable and easy to implement in the workplace, to help establish a more effective prevention system and to ensure effective participation of all employees regardless of level difference in the operating system to safety system. As a result of these, work accidents and occupational diseases can be reduced, scientific occupational health and safety studies can be continued and an environment that will help to increase the countries' development levels. The aim of this study was to show the benefits of occupational health and safety management systems that can provide to employees, enterprises and whole countries and to offer an occupational health and safety management system for Turkey by examining the examples of occupational health and safety management systems of different countries. For this aim, a detailed literature survey is performed and acquired results are evaluated comprehensively

Conceptual Framework

The conceptual framework demonstrates on the relationship between the independent and dependent variable. In this sense, the conceptual framework shall illustrate the relationship between the effectiveness of occupational health and safety as the independent variable and construction project as the dependent variable.



3. Methodology

Research design is “the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedures” by Kothari (2004). Research design explains how chosen method were applied to answer particular research question. Research design is classified into four categories as follows; Research approach (qualitative and quantitative), according to purpose of the study (exploratory, descriptive, and casual research design), according to time dimension (cross-sectional and longitudinal design) and lastly according to topical scope (case study and survey).

This research adopted descriptive research design. Descriptive research method was employed in this study in order to describe, observe, and document occurring phenomenon where frequency, mean and standard deviation was used for looking statistically significant of the variable construct. For the case of this study data were measured through five-point rickets scale for dependent and independent variables.

The sample size of the population was 45 in number, whereas the total population sampling will be applied as the sampling technique to collect data from the research participants from Iringa Municipal. The sample technique is purposive sampling whereby the research participants are subjected to non-random. In this sampling techniques the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (*Etikan et al.,2016*). This involves identification and selection of individuals or groups of individuals that are capable and well informed with a phenomenon of interest. In this case, the participants had no equal chances of being selected in the study. The following is the formula to determine the Sample size (n) that were used

Stratified random sampling was selected for this study because it improves the sample statistical efficiency and gives sufficient data for analyzing the various sub-populations. Under this technique, the population of customers from Tanzania Commercial Bank, was grouped under the following strata: customer category and number of years as bank customer and proportionate stratified sampling was applied to obtain number of customers in each stratum

Purposive sampling is defined by Fowler (2003) as a method that belongs to the category of non-probability sampling techniques that permits a researcher to select samples on the bases of their knowledge, relationships and expertise in relation to the objective of the study. In this study, this method was used to select senior staff of the bank, head of departments and IT managers.

The semi-structured question was open ended so as to guide the researcher to scrutinize the information from the respondents. This provided a subjective look into the problem to be discussed along. The in-depth interviews offered a one-to-one discussion situation between the researcher and the respondent. These interviews as a result helped to explain, understand and explore opinions, behavior and experiences from the subjects. Interview was used among the regulatory bodies

The study had two types of data to be analyzed. The data were analyzed using Statistical Package for Social Sciences (SPSS) version 20 descriptively. Quantitative data were analyzed using descriptive statistics such as frequencies, percentages, mean and standard deviation. Quantitative data were entered and coded on SPSS version 20. Qualitative data was analyzed using content analysis. Data were grouped into themes and analysed into categories accordingly. Direct quotations from respondents were used as justification to their answers. In presentation of findings, the researcher showed how the data from descriptive statistics and content analysis relates or not.

4.0 Findings and Presentation

4.1 Data Analysis in Relation to Specific Objectives

The study analyzed descriptive statistics based on the following observed variables:

4.2.1 The challenges facing the construction workplaces in the implementation of the occupational safety and health practices

To achieve the study objective, the researcher sought to examine the challenges facing the construction workplaces in the implementation of the occupational safety and health practices in Iringa Municipal. Respondents were to respond by ticking most appropriate option ranging from 1= Strongly Disagree, 2 = Disagree, 3 = Undecided, 4= Agree, 5= Strongly Agree. Scale of mean score interpretation was as follows: Respondents had to respond to five items in the questionnaire under this section. Based on the mean values, mean score of 1 to 1.8 represent Strongly Disagree, 1.81 To 2.60 represent disagree, 2.61 To 3.40 represent undecided, 3.41 To 4.20 represent agree and 4.21 To 5.00 represent strongly agree. The results of analysis are shown in Table 4.1

Table 4.1: the challenges facing the construction workplaces in the implementation of the occupational safety and health practices in Iringa Municipal

Statements	N	Mean	Std. Dev	Interpretation
High safety costs	45	2.58	.988	Disagree
Lower productivity	45	2.84	.796	Undecided
Lack of management commitment	45	3.89	1.283	Agree
Lack of Knowledge of advanced safety practices	45	3.73	1.515	Agree
Negative expected impact on project schedule	45	3.22	1.106	Undecided

Source: Field Data (2022)

For the study to understand the limiting factors to OSH, it was first crucial to review how respondents perceived OSH practices to be important at their workplaces. Most of the respondents had a perception that implementing OSH practices helped to reduce injury rates and helped to improve the project reputation. Other perceived that OSH to make the construction project to be responsive to the set time frames while other viewed safety aided sites to reduce project cost due to reduced accidents and legal cases.

As seen in table 4.1, there were varying views on the challenges facing the county's construction workplaces in the implementation of the occupational safety and health practices in Iringa Municipal. Respondents agreed on two items from the questionnaires. Specifically, they agreed that Lack of management commitment and Lack of Knowledge of advanced safety practices as the challenges facing the county's construction workplaces in the implementation of the occupational safety and health practices in Iringa Municipal with the mean score (M=3.89 and S. D= 0.283, M=3.73 and S. D= 0.515). Furthermore, other respondents were neutral on whether Lower productivity and Negative expected impact on project schedule as the challenges facing the county's construction workplaces in the implementation of the occupational safety and health practices in Iringa Municipal with the mean score (M=2.84 and S. D= 0.796, M=3.22 and S. D= 0.106). From the study, the respondents pegged high safety cost as the most limiting factor affecting adoption of safety practices at construction sites

4.2.2 Content Analysis Findings of Interview Data

The study collected qualitative data using interviews. The data were collected from government officers. The data were analyzed using qualitative content analysis.

In the interview, one of the interviewees said;

Government institution interventions on sites is affected through regular inspections at the sites. The small extent of influence on occupational health and safety at construction sites is supported by the fact that only few of the sites had undergone inspections while majority of the sites had not been inspected by any government regulatory bodies.

In the interview, one of the interviewees said;

“Untidy construction site”, “falling objects from working platform, hoist and scaffolds”, and “Failure of platforms and scaffolds” are the first three major factors that contribute to health hazards on construction sites. She added that, other factors include “Ladders not properly placed”, “Manual lifting of heavy weights”, “Exposure to dust” “Poorly maintained tools” and “Exposure to electric” equally contribute health hazards at construction site. Among the factors which least contribute to health hazards on construction sites are “unguarded edges of platforms”, “movement of mobile construction plant on construction sites”, “exposure to fumes”, “Exposure to vibration”, and “Waste materials littered on construction site”.

Muiruri & Mulinge (2014) found out that construction sites compliance to health safety face many challenges. In their survey they found out that provision of personal protection equipment was very low. Management support to health and safety was very minimal and this contributes to poorenforcement mechanisms. Provision of welfare facilities was also poor and low performance in the creation of safety awareness. Evaluations which help in pin pointing action areas for effective plans are rarely performed in construction sites. Some of these challenges are dominantly contributed by poor budgetary allocation to health and safety concerns.

Discussion of the findings

In Kirombo (2012) study, it found out that implementation of occupational safety and health practices is wanting because it is expensive. This is partly because of cost benefit analysis especially by private project developers who will rather consider profits than to incur costs in provision of such safety measures. According to Bernstein (2013)’s study, firms are discouraged from investing in safety measures because of several reasons. In his findings, it was established that 35% workplaces blame increased safety costs, 32% claimed lower productivity, 31% reported the lack of organizational commitment, and 24% claimed the lack of knowledge on advanced safety practices and 22% blamed negative expected impact on project schedule as the contributor

5.0 CONCLUSIONS AND RECOMMENDATIONS

The study concluded that there were varying views on the challenges facing the county’s construction workplaces in the implementation of the occupational safety and health practices in Iringa Municipal, lack of management commitment and Lack of Knowledge of advanced safety practices as the challenges facing the county’s construction workplaces in the implementation of the occupational safety and health practices in Iringa Municipal. The study established that monitoring bodies rarely conducts site inspections. Such bodies should be appropriately supported to give them capacity to monitor all industry players to ensure they provide a conducive working environment and adhere to statutory laws and regulations on health and safety; construction firms and project managers should be compelled to understand the safety and health laws and regulations through training accompanied with evidence. Implementation of such regulations should be a mandatory requirement to all construction workplaces; all construction project stakeholders, especially project owners to subcontracted projects, and consultants should be concerned with site safety matters as part of the subject in project inspections and monitoring, contractor’s safety polices in construction sites. Every contractor should have OSH policies in order to maintain the standards of safety in construction sites. In doing so, they should ensure that every person employed participates in the application and review of

safety and health measures and policies to avoid some and also to allow the employees to own the policies and feel accommodated. This will assist in compliance as the employees and the management will be part of all formulated policies.

REFERENCES

- Adom, D., Hussein, E.K. & Agyem, J.A. 2018. Mandatory Ingredients of a Quality Research. *International Journal of Scientific Research* 7(1): 438-441.
- Adow, A., M., M. 2013. The management of health and safety of construction sites in Accra. *Civil and Environmental research*. Vol. 3. No 12.
- Cresswell, J., W. 2014. *Research design: quantitative, qualitative and mixed methods approaches* (4th ed). Thousand Oaks, CA: Sage Debois, S. 2018. *10 Advantages and Disadvantages of Questionnaires*. Retrieved <https://www.editage.com/insights/importance-of-research-ethicS>
- Giri, P., O. 2020. Factors causing health and safety hazards at construction sites. *Technical Journal*. Vol. 2. No1. Pp:68-74
- Houran, J., &Kefgen., K., 2020. Money and employee motivation. www.URL.2020skills.com
- ILO., 2018. Occupational Safety and healthy in construction. www.ilo.org/wcmsp5/group/public/@ed.../@safework/.../wcms_107826.pdf
- Kothari, C. R. 2004. *Research methodology: Methods and techniques*, 2nd Edition, New Age International Publishers. New Delhi
- Kothari, C., R. 2012. *Research methodology*. 3rd Edition. Bangalore: New age Publishers
- Kessy., S., S & Raymond, R. 2021. The role of organizational Health and safety management system in Reducing Workplace Hazards in Tanzania Manufacturing industries. University of Dares Salaam. –Vol: 16. No 2 Pp 70-88
- Manu, P., Ankarah., N., David P., &Suresh, S. 2013. The health and safety impacts of construction Projects features. Doi:10.1108/ECAM-07-2012=0070
- McKubre, S., M, Macdonald, D., D, Sayer, B., & Macdonald, j., r. (2018). *Measuring techniques and data analysis, impedance spectroscopy: Theory, experiment and applications*, pp.107-174
- Masanja, N.M. (2019). *Practical guide to dissertation and thesis writing*, Arusha: Tanzania: NMM Printers. .
- Maslow, A. H1943. A theory of human motivation, *psychological review*, 370-396; <http://www.abika.com>
- Mrema., E., J., Ngowi, A., V & Mamuya., S. H., D. 2015. Status of occupational health and safety and related challenges in expanding economy of Tanzania. *Annals of global Health*, 81(4). DOI.org/10.1016/j.shaw.