## THE IMPACT OF SAFETY TRAINING PROGRAMME IMPLEMENTATION ON PROJECT PERFORMANCE AT THE ELECTRICITY COMPANY OF GHANA, VOLTA-REGION

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## MASTER OF SCIENCE IN PROJECT MANAGEMENT

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#### DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously written or published by another person nor material which to a substantial extent has been accepted for the award of any degree or diploma at Kwame Nkrumah University of Science and Technology, Kumasi or any other Educational institution, expect where due acknowledgement is made in the Thesis.

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#### ABSTRACT

Safety involves both physical and psychological wellbeing of employees in an Organisation and other persons such as the public or customers are adversely affected by the activities and these are of major concern to the employees, employees, Governments and stakeholders but most Project management fails to put in place adequate measures in the safety programme on their project such as safety training. As said by Bamber, (2008) project workers should obtain adequate training in Health, Safety and Environment by making sure that significant lawmaking and procedural factors belonging to Safety are given attention during the initial and all phases of project development. When project members get appropriate safety training for a project, it enhances their knowledge and attitude as well as behaviours to perform their activities in a safer way Goetsch, (2005). The aim of this research was to assess the 'Impact of Safety Training Programme implementation on Project Performance in an Organisation', precisely Electricity Company of Ghana (ECG), Volta-Region with objectives 'to identify the level of impact in the implementation of Safety Training Programme on the Projects performances among others. Thirty-two (32) Staffs were purposively selected because the respondents had deeper knowledge and understood the study area to provide accurate responses, but only Thirty (30) respondents responded and returned the Structured Questionnaire. Descriptive statistical measure with the distribution tables was employed for ranking in the presentation and analysis of the data for the study. Findings of the study revealed that, even though the Electricity Company of Ghana provides safe environment with management commitment for the implementation of safety training programme on projects, it still lacks adequate resources provision such as equipment to use in the implementation of the program for safety to be adhered. However, these have affected how workers sometimes perform on the projects despite the fact they have been trained safely. But above all, the implementation of Safety training programme has positive impact in improving the Organisation projects performances. The Study recommends management of the Electricity Company of Ghana to review its implementation on Safety training periodically and also provide adequate provision of resources such as the PPE, tools and equipment for all participants undertaking the training to help understand the concept of safety procedures for safety adherence on projects in improving project performances in the Company.

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## LIST OF ABBREVIATION

SHE	Safety Health Environment
ECG	Electricity Company of Ghana
VRA	Volta River Authority
PPE	Personal Protective Equipment

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#### **DEDICATION**

I dedicate this work especially to my Late Father, Mr. Wilson Kwadjo Empeh of loving memory, Euphemia Vida Mintah (Mum), my Siblings and Michael Anyigbavor for their spiritual, physical and moral encouragement for making this Programme and work a success through this challenging period.

#### **CHAPTER ONE**

#### **INTRODUCTION**

This Chapter entails the Background of study, Statement of the Problem, Research Question, Aim of the Study, Objectives of the Study, Significance of the Study, Scope of the Study, Overview of Methodology, Delimitation of Study and Organisation of the Study in 'Assessing the Impacts of Safety Training Programme implementation on Project performance at the Electricity Company of Ghana (ECG)'.

#### 1.1 Background of Study

There has been an existence of several factors in relation to why organizations achieve higher performances than others. Projects achieve objectives when it is performed and its performances are measured to align the project achievement which also links to the project objectives, Chan and Chan, (2004). They established a combined structure of determining success in a project, these includes Environmental performance, Quality, User expectation, Health and Safety and Satisfaction of the people involve etc.

According to Harrisand and McCaffer, (2005) safety measures should be developed throughout the project definition phase. Project safety is vital when starting a project in any environment therefore workers should be educated and Trained by the project managers on the safety requirements to help understand that accidents on project site occurs.

In Ghana, Section 118 (1) Ghana Labour Act of 2003, Act 651 state 'the responsibility of an employer is to make sure that each employee perform their duty in an acceptable, safe and healthy manner and also compulsory to employ safety officers in companies even when there is a higher workforce'.

According to Hughes and Ferrett, (2007), Safety is to protect people from injury and mental welfare in any institution. Cole, (2002) also noted that the safe environment has been given adequate attention recently since some labour professionals consider that Organization safety measures are essential for the continuance of industrial production. Project safety is providing safety and wellbeing of participants involved in the project in diverse field Whitner, (2001). An ultimate incentive for any employer in an Organisation is to provide safe environment to work in preventing injuries and reducing costs associated with compensations, from the workers, Rosner (2000). Avoiding causes of accidents and training saves cost, increase productivity and consistency as well as trustworthiness from them in the Project.

Safety is an integral part which involves both projects management commitment and project team responsibility Chan and Chan, (2011). The objective of occupational Safety policy is to create safe environment to protect the employees, employers, customers, stakeholders and the public affected with the activities at work, Whitner (2001).

Safety Training Programme should therefore be implemented in the safety policy to accomplish its objectives. Management of a project should establish valuable approaches in safety policy implementation such as Safety Training Programme which must be aligned with Organisational culture since safety performance fails without it Cooper, (2002).

According to Bamber, (2008) project workers should obtain adequate training in Health, Safety and Environment by making sure that significant lawmaking and procedural factors belonging to Safety are given attention during the initial and all phases of the project development. Training is an ongoing process which is studied

and revised for emerging conditions and safety issues. Training should be link to safety awareness and the understanding of possible hazards.

As said by Osuala (2005), providing safety to the workers gives moral dimension as well as legal obligation therefore preventing causes of accidents at work plays a significant role in reducing costs, productivity and ensuring consistency from the employees.

Unsatisfactory work environment have an adverse effects on employee in lowering their performances as a result of lack of the implementation of safety training programme. Causes of injury of the selected Organisation in the Study can be workers tripping on the project site, machine related problems, exposure to dangerous lines. Nevertheless, the significant solution to this present problem is to implement the Safety Training Program put in place which involves the reduction of accidents and hazard, mechanical handling among others.

However, the cost of providing safe work environment with it training differs depending on the hazard associated on Project. Safety Policy and Programme such as Safety Training Program plays a significant role in Organisation performances through the collaboration of employers and employees, (Robbins, 2004).

Employers must ensure safety of their employees at work in order not to be liable for injury or accident by providing safe machinery and working system for employees through safety program such as safety training and implement it effectively.

The research aims at assessing 'The impacts of implementing Safety Training Programme on project performances at the Electricity Company of Ghana (ECG)'. Adherence and implementation of safety Training Programme on projects improves project workers' productivity as well as the overall project performances. Project management should see to it that Safety Training Programme are implemented

effectively and reviewed frequently since projects methods keeps varying and associated with risks.

#### **1.2 Statement of the Problem**

In the past, workers who were injured on the job took legal action on their employers for temporarily or permanent disability because they failed to provide safe environment as a result of inadequate safety mechanism at the Company and this also affected families of these workers who suffers the loss all through their lives. Then the development of workplace safety policy with its safety programme and compensations began in as a way to the Company from any lawsuit by injured employees.

In Ghana, the energy industry is considered as challenging environment, where projects member's encounters hazards and other health problems that affects their safety as they operate on unsafe conditions when undertaking a project. Some Researcher has made emphasis on several companies practicing Safety programs on unplanned basis leading to occupational accident and loss of lives which creates an impression that, some project work place are accident prone zone area, (Nagy and Cenker, 2002). A safety practice in an Organisation has created debate in modern times (Shipton et al, 2005).

Employee's attitudes plays a major role in safety Training programme but most of them do not adhere or cooperate to safety regulations and instruction as a result of low level of understanding of safety practices set up by the organisation and this most of the time leads to accidents, loss of lives and damage to property which impact negatively on the organisation, hence the implementation of the programme is crucial. Despite the availability of safety Programme to influence Project performance in an Organisation positively, injuries and deaths still occurs on projects in an Organisation, therefore the implementation of safety programme such as safety Training programme in an Organisation Project is crucial. Previous Studies such as Mberia, (2001) conducted a study on work-related health and safety programme implemented by banking sectors in Kenya. He stated banks adopted Safety policy programme such as helping management commitment on safety.

With this, there is additional study to be conducted on the implementation of Safety Training programme on projects at the Electricity Company of Ghana (ECG) and how this can impact on their project performances.

#### 1.3 Aim of the Study

The study aims at assessing the impact on Safety Training programme implementation on Projects performances at the Electricity Company of Ghana (ECG) Projects.

#### 1.4 Objectives of the Study

- To identify the level of Safety adherence through the implementation of Safety Training Programme in the Organisation Projects.
- To identify the level of impact of the implementation in Safety Training Programme on the Organisation Projects performances.
- To identify challenges affecting the implementation of Safety Training Programme on the Organisation Projects.

#### **1.5 Research Question**

1. What extent is the level of Safety adherence on project through the implementation of Safety Training Programme?

- 2. What are the various impact of Safety Training Programme implementation on Project performances?
- 3. What challenges are associated with the implementation of Safety Training Programme on projects in the Organisation?

#### **1.6 Significance and Justification of the study**

As stated by Noel (2010), studies on health and safety practices have been subjected by large companies in developed countries. Therefore, studies on improving occupational and project safety to achieve Organizational objectives are still developing. The study conducted will also add to the research already conducted in the area of Safety to also assist as an add-on in investigating this subject area for other researchers, for that reason it will add to the stock of literature accessible on the study area.

The study would enhance the morale of employees by receiving a better understanding of safety practices through the implementation in the organization to help them adhere with safety standards to reduce accidents and also increase their performances on projects in the Organization.

The study is important as it assesses the Impact of implementing Safety Training programme on Projects at the Electricity Company of Ghana (ECG), Ghana and how it impact their project performances. It will also provide Customers, other business stakeholders, foreign investors and Government of Ghana with the aim of using Safety Training Programs as an approach in Projects Safety to ensure safe and healthy working environment. It also serves as a basis for understanding on how Safety Training Programme implementation affects Project performances to businesses and key stakeholders.

Therefore, the research is justified to be undertaken with a fundamental purpose of establishing a recommendation used to improve the implementation of Safety Training Programme on Project in an Organisation.

#### 1.7 Scope of Study

The research aim at underpinning the implementation of Safety Training Programme and its impact on Project Performances in an Organizational Projects in Ghana, with particular emphasis on Projects executed by the Electricity Company of Ghana (ECG) Volta-Region as its case study.

#### **1.8 Limitation of the Study**

Respondents in the Study have unfavourable work schedules and were reluctant to provide the data which made my administering and collection of data a challenge, there was both financial constraint and limited time with regard to the study process.

#### **1.9** Overview of the Methodology

This Thesis is aim at identifying the implementation of Safety Training Programme and its impact on Projects performance at the Electricity Company of Ghana (ECG) projects executed by the Volta-Region using Qualitative and Quantitative Case Study. Both Primary and Secondary Sources was used as Data Sources. The methodology analyzes the research strategy, population and sample size and sampling techniques, data collection procedures and methods for data analysis. The unit of analysis was an Organisation.

The study focuses only on Safety Officers and the Operation Staffs of the Electricity Company of Ghana (ECG), Volta-Region. A purposive sampling technique was used and a standard questionnaire was administered to the respondents of a total number Thirty-two (32). All raw data will be gathered manually, input in an excel spreadsheet and analyzed with the descriptive statistical measure of mean.

#### **1.10 Structure of the Report**

This study is organized in Five Chapters and there are as follows

Chapter one of the study presents the Background of the study, Statement of Problem, Research Question, Objectives of the Study, Scope of the Study, Significance and Justification of the study Overview of Methodology, Limitation and Organisation of the Study.

Chapter Two also analyses relevant literature on concepts and core issues of the study. This presents the organisational safety policies, safety programs, safety Training Programme, the Project Performances and how to measure it and the implementation of Safety Training programme challenges in Ghana. The literature review also provides impacts on organisational safety Training Programme implementation.

Chapter Three describes how the study are conducted using methodological issues such as Study design, Sources of Data, Unit of analysis, study's population, the sample size and sampling instruments, Sources of data and collection for analysis and presentation.

Furthermore, Chapter Four also discusses and analyses data collected from the field of the study. This chapter also provides results from the questionnaires using a descriptive statistical method.

Lastly, Chapter Five summarizes the findings, provide conclusions and recommendations for the study. Limitations of the study were also spelt out which involves research difficulties faced during the process. A further recommendation for future studies was provided.

#### **CHAPTER TWO**

#### LITERATURE REVIEW

The literature review is organized base on concepts originated for the purpose derived from Organisation related safety published in journal articles, dissertations as presented in the concept using boththeoretical and conceptual framework.

#### 2.1 The concept of Safety and its Policy

Safety involves the environment of an organisation and all issues that affects the safety, health, and well-being of employees, Hughes et al, (2008). These comprises of hazards, unsafe working conditions, abuse and violence at work.

An implementation of Safety management is determined by the safety culture of the organization. Numerous studies supported this such as Seppala (1995) who conducted in a study, safety culture with an involvement from organizational hierarchy was necessary for effective safety and health in an organisation. Safety is protection against hazards at the place of work Ngirwa, (2005).

In an Organisation, a Safety Policy document should be known and communicated to all employees to guide on how the safety can be adhered. Safety Policies enables management to help cultivate employees 'behaviours to achieve safe environment as well as minimising the accident occurrence.

Safety policy must state the safety goals, roles and responsibilities as well as authority for their attainment for the company, Aswathappa, (2004). This policy must state four

fundamental areas including employees 'safety and public, involvement of management and employees' involvement in the implementation of safety policy and compliance with safety law.

In an organisation, is important to establish safety and health principles because of moral, economic and legal requirement (Roughton, 2002). In economic terms of governments, weak safety and health performance can be costly for the State. Legally, an organization suffers from legal action when they do not comply with the law.

Four critical success factors to Safety are as follows; workers involvement, safety prevention and control system and safety commitment (Hadikusumo and Arksorn, 2008). Safety Policy and Programs put in place to be implemented to help employees in the organization, (Cole 2002). Safety Policies help an Organization to exhibit due diligence which increases the performances and moral of the employees.

#### 2.2 History of Safety in Ghana

According to Quainoo, (2001) developing countries such as Ghana do not have major policies to effectively provide for the employees' health and safety in an organisation. Ghana Occupational Health and Safety Act was established in the Factory Offices and Shops 1970 Act, 328 aligned with internationally safety and health standards, and welfare of employees.

Even without a nationwide occupational policy on Health and Safety, the Factories Offices and Shops Act (328) 1970, Workmen's Compensation Law 1987 and the Environmental Protection Agency driven the implementation bearing health and Safety Act, (490). This Act states that when an employer fails to perform their responsibilities below is committed with an offence and will be responsible to pay a fine or sentence for a term not beyond three years or to both but an employee who knew of the job hazard and as result of negligence die or injured, the employer will not be held liable.

According to Ghana's Labour Act 2003, Act 651 it state an employer;

- 1. Shall offer and maintain equipment and work system safe and without posing risk to the health of employees.
- 2. Make sure absence of risk to safety and health in the usage, handling of equipment, storing and transport of materials are in place.
- 3. They shall also deliver essential information, guidelines, training, monitor and control employee to ensure safety at work.

With this background, the emergence of the practice of safety programmes began.

#### **2.3 Safety Programmes**

Safety Programme involves the avoidance and reducing of hazard elements likely to cause accidents as well as developing safe working behaviours among employees. The aim of health and safety programme is to establish safe environment to work. Whitner (2001) opposed that it also protect employers, customers, suppliers and the public who are impacted by the work activities.

According to Dessler, (2000) stated that employees must contribute to attain Health and Safe environment. Therefore, it is the obligation of all organization to implement safety program to attain the requisite safety standards in reducing injury, death and damage to property. Safety training programme aids workers to discharge various preventive actions and build positive attitude to safety. According to Rowlinson (2004) the objectives of safety programme in organisation are to: (1) avoid offensive conduct which may direct to accidents (2) reports all wrong behaviour and lastly ensure accidents reported are handled appropriately. Components of Safety programs are safety training, job hazard analysis, safety incentives programs, personal protection equipment's (PPE), safety accident investigations and safety committees (Rowlinson, 2004).

Hadikusumo, (2008) classified four factors critical success and these are as follows; employees 'participation, safety preventive and control methods and management commitment. Management must ensure that adequate resources are allocated. Safety Policy and Programmes are established for implementation to benefit both employer and employees in the organization, Cole (2002). Safety Policies provides basis for managing the Safety Programmes in an organisation and also help exhibit due diligence which increases performances.

It is essential for any organization to employ Safety procedures and instructions in handling, equipment's and chemical to ensure Safety of the employees. An implementation of these Safety programmes is significant in an organisation because it reduces accident rates, compensation claims, good reputation, productivity, improved relations with stakeholders, reduces legal act and accident cost risks, increased productivity and makes employees in an Organisation to be healthier and motivated.

According to Grote and Kunzler (2000) some safety programme used to assess an organization's safety culture, includes: Safety training, Safety committees, Record keeping on accidents and Communication.

To attain safety objectives, all participants including the employers and employees, or person affected with the activities must be involve and committed to the safety programs in the Organisation

#### 2.4 The Concept of Safety Training Programme

According to Toole (2002) the establishment of Safety Training Programme develops employee's knowledge on safety which leads to improvements in safety behaviours and attitudes at work. Employees must have the right attitude to adhere safety procedure and instruction.

According to Choudhry and Fang (2008) through a study conducted, workers in an organisation involve in unsafe conducts due lacking of safety awareness, work pressure, economic and psychological factors. Their aim on the study was to find out why an accident occurs and the unsafe work behaviour and was undertaken through interviews with the workers. Effective safety training and education programme brings positive safety behaviours (Zohar, 2002).

In an Organisation, employees must be educated on hazards, communicated and trained to comply with safety instructions and regulations. Safety training are in various ways, Tsui and Gomez-Mejia, (1988) and this can be done through:

• Having normal safety training sessions with supervisors and workers

•Display videos, television broadcasts as a means to conduct safety training.

Employers and employee should be trained and also review the implementation of the program regularly since the production methods keeps varying and associated with new risks and hazards at work. This safety training programme can involve lectures by safety experts, manual handling, films etc.

#### 2.4.1 Success Factors of Safety Training Programme Implementation

According to Cheung et al (2011) studies conducted on safety has recognise that safe environment yield substantial profit. Organisation can make their environment more safe employing in safety culture (Chan and Chan, 2012).

In an organisation, Supervisors are the central individuals in such programme because they are always in connection with the employees and safety officers should act in their staff capacity to help implement safety training programme by providing technical information through the programme material.

Management of an Organisation should be committed in making the safety training programme a key concern at the workplace because it plays a significant role. They must provide enough resources for the implementation of the safety training programs. These programme together with concerted efforts must be made to guarantee its sustainability (Alli, 2008).

Safety training programme is seen as a success when employees adhere to the safety rules procedures through the implementation of the training programme Ekenes, (2001). It is also argued that safety training is significant because it supports workers to understand the standard operation procedures, identifying of potential hazards and the risk related with its control system (Jensen, 2005).

#### 2.5 Organisational Role and Attitude to Safety on Projects

As stated by Stranks, (2000), methods on accident avoidance are in the managerial power of the organisation. In an Organisation, accident control programme outcomes are from management commitment and employee's collaboration and participation

(Beach, 2000). Therefore, management should involve in safety activities with safety being a priority in meetings of an Organisation.

Safety's approach needs to start from the top management level with leadership and commitment through senior managers and down to the low level employees (Holt, 2005). Employer's responsibility is to ensure a healthy and safe working environment. There has been increase of accidents occurrences on project site which has affected the safety performance of the organization Bellamy et al, (2008). Cole (2002) noted that, an employer partakes in common law obligation to provide safe environment to work and liable when it fails to observe it for employees.

As said by Bamber, (2008) Safety and Health must be involve from the design and planning phase of projects also urge that all members involved in these stages have received adequate training in Safety. In an Organisation, poor safety performance increases the overhead costs as well as the uncertainty of the cost of the welfare on employees Assaf et al., (2001).

Organisation must provide safety training program for participants on a project to help them to understand safety throughout the phases of the project. Addressing the safety on workers during the project design stages requires the understanding of the likely impact of designers' results on safety of the project workers.

Employer's prime obligation is to provide safe, healthy and friendly environment to their employees and this employee are also responsible to work in this environment.

Along with Pantry, (1995) management ought to make sure that safety procedures are implemented effectively by providing training with adequate resources. Improvement in Safety is the duty of management and team members to attain the goals of the company, (Beach, 2000).

Project managers' influence safety through it planners, designers and engineers to design and requires materials and processes that are safe on the projects because inadequate safety compromise the project quality.

According to Krause, (2004) projects are conducted in diverse ways to contribute in the progress of a business therefore it unavoidably on external factors. Every Organisation must ensure projects are carried out from a safety perspective and that no project should commence until being acknowledge by the Health and Safety department.

#### **2.6 Project Performances**

As said by Gunderson, (2002) numerous researchers have developed performance indicators in measuring the impacts of workplace practices on organisation performance.

In relation to Smallwood, (2004) five project parameters which are project quality, Health and Safety, schedule and costs were conducted in a research study. It was proven that Health and Safety programs has positive impact on the project schedule, improved efficiency and reduces compensation (insurance) costs on the project (Smallwood and Haupt, 2005). Hence, Safety Training as project constraints would produce positive outcome on project performance.

Several Authors such as Chan and Chan (2004) have measured project success on different dimensions. They established a combined method for measuring project's success and these are made up of the following: (1) Environmental performance (2) Quality (3) Cost (4) User expectation (5) Schedule (6) Profitable Value (7) Health and Safety lastly, Members' Satisfaction.

As said by Harris and McCaffer, (2005) safety measures must be created during the project definition phase and the ability for project's success to increase depends on a project manager to establish safety strategies on the organizational Project.

As said by Chan and Chan (2004) Key Performance Indicators (KPIs) in his study conducted was used for measuring construction success has been adopted for measuring project performances shown in the table 2.1

Dimension	Key Performance Indicators	Measurement Definition
Schedule	1) Time for construction	Project ending date – Project
		beginning Date
	2) Construction speed	Gross Floor area / time of
		construction
Cost	1) Unit Cost	Final Contract Sum / Gross
		Floor area
	2) Percent Net Variation	Net value variations) * 100
		%)
		/ Final Contract Sum
Profit	Net Present Value (NPV)	N $\Sigma$ (Net Cash Flow),/
		(discount rate) <sup>t</sup>
		t=0,
Health and safety	Accidents Rate	(Total no. of recorded
		accidents) / (Total workers
		employed on a particular
		project

**Table 2.1 Measurement Formulae on Project Performance** 

Source: Chan & Chan, (2004) Key Performance Indicators for measuring construction success: An International Journal, 11(2), 203-221

#### 2.7 Employees adherence to Safety

According to Nexis (2005), employees must adhere to safety regulation. In order to reduce safety risk, an employer in a company must provide safe environment to work, training for employees and monitor to ensure adherence to safety regulation. When an employee's fails to adhere to safety training instruction, it can leads to accident,

injuries and cost to the Organisation. Accident cost and causality are reduced when employees are trained to comply with safety issue in the organisation (Eweje, 2005). As said by Mati and Paul, (2007) employees adhere to safety regulations when there is proper implementation of Safety Training with adequate resources. Study on occupational health and safety has begun to focus on examining the employee's behaviour processes since it has linkage on safety adherence to impact on accident reduction (Wallace and Vodanovich, 2003).

According to Brown et al, (2000) adherence to safety regulations has major impact on workers safety performance. For organisation to reduce accidents they must establish safety adherence culture through safety training Feng et al, (2014). This enable them adhere to safety instruction. For safety adherence, there must be reward incentive for good behaviour as it help motivates employees to work safely and these can be based on an individual or group level.

#### 2.8 Impact of Safety Training Programme on Project Performance

Some literature revealed that safety training has major positive impact in many aspects of the Project. The first impact of safety training program implementation on projects is the cost reduction aspect. Fatalities, injuries and disease contribute to the cost of workers' compensation insurance and these costs of accidents are integrated into the project cost. Safety training programme implementation reduces project cost but can also increases the project cost entailing salaries for safety and certain administrative personnel. Safety training programme complements the technical performances because when it is implemented it enhances project quality, (Levitt and Samson, 1993). Safety Training programme reduces the overtime work as a result of accident from the Project.

Another impact of Safety Training Programme is knowledge and skill transfer. When project members get appropriate safety training on a project, it enhances their knowledge and attitude as well as behaviours to perform their activities in a safer way (Goetsch, 2005).

Workers undergoing this program obtain relevant knowledge and skills before actualising on these activities. Safety knowledge may possibly be acquired through safety training, (Mukerjee et al. 2002). A study review by (Sinclair et al. 2003) shows that safety training has increased knowledge and reduced injuries at work.

Safety Training Programme Implementation help in the successful completion of a project which includes completion on schedule, within budget, to quality requirements without damaging the environment as well as minimising disease, fatalities or injuries on project.

Another impact of Safety Training Programme, it improves safe work practices which entails the practices in which activities at work are performed safely, (Goldenhar et al. 2001). Engaging in safe work practices reduces risks and ensures the safety of other people living around the environment which you operate, (Burke et al. 2002).

It also enhances Customer Satisfaction on a Project. They see Safety training programme impact in the reduction of construction cost and completion on schedule and to quality and less complications. Stakeholders are people classified as the client, the developer; the project team and the end user are satisfied when there is an implementation of the program, (Shenhar, et al 1997).

#### 2.8.1 Safety Training Programme Impact Measurement

As said by Mullen and Kelloway, (2009) There has been a developing issues relating to the variables used in the measurement of the impact in safety training without a generalised format to use. Any assessment conducted on the impacts of the implementation on safety training in earlier literature could be used to measure safety training on individual performances or organisational performances. However, it is important to establish impacts scale for the implementation on safety training for this study.

#### 2.9 Risk Management

As said by Udosen, (2000), majority employees involve in various activities which are associated with specific risks. In safety management practices, risk management is vital since it involves the action of decreasing risk exposure on an Organisation (Bamber, 2008). Risk is the likelihood and consequence of specified hazardous event to occur.

In relation to Safety of workers in an Organisation, risk assessments are significant to identify hazards and analyse risks. The aim of assessing is to produce preventive methods to control it using quantitative risk and qualitative risk assessment. In risk assessment, it crucial to consider the person being harmed as well as visitors around the place the incident took place.

As said by Rundmo, (2000), risk perception sometimes affects the behaviour and also the likelihood of accidents occurrences. Risk perception is composed of a subjective assessment of the probability of experiencing an accident or a health injury caused by exposure to a risk.

#### 2.10 Challenges of Safety Training Programme Implementation

According to Mansfield, (2001) most companies who employ safety practices such as the training program lack formal methodology or guidance which make safety practice in an unplanned basis. High cost of providing Safety Training Programme prevents an Organisation to undertake Safety Practices (Ingalls 2002).

Staff ignorance and negligence on adhering to the instruction also poses a challenge. Unqualified safety officers are being employed in an Organisation to cater health and safety issues and this causes occupational accident, injuries and loss of life, (DeJoy, et al. 2000). Inadequate resources pose a great challenge to Safety Training.

Safety program implementation is a complex practice because there are many factors affecting it successful. Challenges with Safety practices are categorised into people, process and technology (Matherly, 1997). People aspect entails the risk of employees and lack of commitment. The process aspects are the inconsistencies between the government and organisation in the implementation and adherences of safety standards. The Lack of government monitoring and controlling programs on organizations, making sure they comply with minimum safety standards also poses a challenge to the programs.

A study conducted by Mwombeki, (2005) discovered that, most Tanzanian contractors could not implement in improving the health and safety performances of the construction industry even though they understood the importance of health and safety programs. Most workers are barely literate which makes the implementation of Safety training Programme difficult in an Organisation, Koehn et al. (2000). The culture of an Organisation does only promote safety Training Programme but the challenge is the involvement of all stakeholders in ensuring a safe environment.

As said by Ingalls, (2002) in a study conducted on 'safety performance measures', he found that there is existence of high cost in providing health and safety materials and this sometimes discourages management to implement safety fully because it pose a challenge in the company.

#### **CHAPTER THREE**

#### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The researcher hopes to assess the Impact of implementing Safety Training Programme on Projects at the Electricity Company of Ghana (ECG). Hence, both Quantitative and Qualitative were used for this Study Design. The methodology used includes the research strategy, population and sample size, the sampling techniques, data collection methods and analysis.

#### 3.2Background of the Study Area

Electricity Company of Ghana (ECG) formerly known as Power Distribution Services Limited (PDS) is a Limited Liability Company owned by the Government of Ghana and was recently owned by Public-Private Partnership (PPP) with the Government of Ghana being the largest shareholder of 59%, followed by Meralco and independent private partnership having 49% stake in the company but has been suspended to operate as a Public-Private Partnership. It was incorporated under the Companies Code 1963 in February, 1963 with mandates to purchase electrical energy in bulk from Volta River Authority, Gridco and Independent Power Producers (IPPs) for supply or distribute electrical energy to the people of Ghana within the Company Eight (8) administrative Region and Eight-two (82) operational areas which operates on sound commercial lines in discharge of duties and also aim at a judicious supervision of rural electrification project on behalf of Government of Ghana. The primary objective of the Company is to supply electrical energy to the people of Ghana within the Company's operational area.

Safety and Health Environment Division known as SHE is one of the Five Division in Operation Directorate Located at the Project Office in Accra with its two Sections namely Safety Section and Health and Environment Section in ensuring good performance in Safety health and Environment in ECG operation. The Safety, Health and Environment officers represented in the Regional offices responsibilities are to see all issues relating to Safety, Health and Environment of the company's operation and advice Management on how to mitigate those issue. The Division core mandates are to ensure;

- The safety and health of workers by providing appropriate SHE training and Seminar of accident and Safety as well as providing appropriate Personal Protective Equipment and identifying and correcting hazard at work.
- 2. The Safety of the Public
- 3. Lastly, protection of the environment from our operation

http://www.ecg.gh.SHE/weekcelebration/2018/ (Accessed 05-11/11/18).

Electricity Company of Ghana (ECG) initiates and executes numerous projects and one of such is the Construction and Rehabilitation of Substations to significantly improve the performance of their distribution network in the various Regions as well as the supply quality in meeting the increasing improved power supply for their customers in Ghana and beyond. Projects in Electricity Company of Ghana are undertaken by Project Office representatives in the various Regions. This Project office mandate is to carry out all project activities by their project staff across all the operational Region of the Company Various Network infrastructure projects initiated in the Region including the Construction of Primary Substations and Switching, Construction of 33/11KV network Lines, Network Extensions and intensification as well as 33/11KV Network upgrade and expansion to various communities in Volta Region are undertaken by the Volta Regional office operations department.

The study was carried out at the Electricity Company of Ghana (ECG), Volta-Region as its Operational Region with eleven (11) districts under its supervision and managing their operations.

#### 3.3 Research Design

According to Amedahe, (2004) study design describes the structure of the study and also gives the outline of how the study should be conducted. This study design used a descriptive survey to gather data for analysis which helps to generalized results from a sample of population in determining the respondent's perception on the variables being studied.

#### **3.4 Population of the Study**

The study used a target population comprised of staffs in the Departments of Operation and safety respectively at the Electricity Company of Ghana (ECG), Volta-Regional Office. The selection of the target population was based on the fact that all the target group have a variety of hazards and accidents common to many other at the workplaces such as falling and had received safety training. The total population for the Study was 184. The operation population consist of several Sections such as maintenance Section, Draught men section, Project office, Bulk Supply Point (BSP), Line men (Section), Fault Section, and Control Section among other with only one (1) Section in the Safety Department.

 Table 3.1 Target Population at the Electricity Company of Ghana (ECG) Volta 

 Region

No	Target Population	Number of person under the Category
1.	Operation	183
2.	Safety	1
TOTAL 184		184

Data Source: Volta-Region Human Resources Department of EGG, 2019

#### 3.5 Sampling and Sampling Technique

Sampling deals with choosing portion of a population to denote the target population in the study, (Amedahe, 2004). This entails particular unit of the population for the study, (Sarantakos, 2005). On the other hand, Burns, (2000) proposes that, sample size of a study is determined by the population, data to be collected and analysis and the funds availability for the study.

#### 3.5.1 Sample Frame

The study used target population of the Operation and Safety Department in the Electricity Company of Ghana (ECG), Volta-Region including Draught men, Project Engineer, Project Supervisor, Maintenance Team and Safety Officer with varied background and perception on the variables in the Study.

#### 3.5.2 Sample Size and Technique

Sampling techniques employed in the study was the Purposive Sampling because it targeted the appropriate respondents in addressing the specific question. The researcher segmented the target group purposively from the Department of Engineering and Safety respectively. Thirty-two (32) Staffs were selected purposively from the Target population this Study including Draught men, Project Engineer, Project Supervisor, and Maintenance Team from the Operations Department and a Safety Officer from the Safety Department of the Electricity Company of Ghana to give accurate information for the study.. Criteria used for purposively selecting the respondents were:

- 1. Respondents had deeper knowledge and understood the study area to provide accurate responses.
- The Study only focused an aspect of the activities undertaken by the Electricity Company of Ghana, Volta Region but not a generalize activities undertaken by the Company.
- 3. Respondents were the only employees under the Volta Region Electricity Company of Ghana to initiate and manage projects for the Company

#### **3.6 Data collection Methods**

Data of the Study was collected using a primary data of both Qualitative and Quantitative methods through a researcher-administered questionnaire. The questionnaire was designed by the researcher based on Chapter Two of the Literature review and the research questions stated in section 1.4. The use of Secondary data which has been already gathered and analyzed by other people other than the researcher on the study topic through publication, textbook and other material was also employed in the study. The data collection method of the study provided flexibility and economical way of collecting information from the field.

#### 3.7 Questionnaire Design and Administration

As Lucas (2007), proposes survey questionnaires being on simple (one page) or up 100 with tick boxes or Likert scales for response but when there are countless questions on the Questionnaire, it reduces the response rate drastically.

In this study, a structured questionnaire method was designed in that the respondents answered the extent they agree or disagree to the question. The researcher also provided a background of her study and the expectations for each respondent she provided the Questionnaire and assured of confidentiality as well as the researcher's contacts for any additional enquiries concerning their involvement in the study. The administering and collection of questionnaires started on 12<sup>th</sup> August, 2019 and ended on 26<sup>th</sup> August, 2019 respectively giving the respondents Two (2) weeks for their responses. Data gathered was organized for sorting, processing and analyzed with a descriptive statistical measure of mean for information in the Study.

The questionnaire used for the study was divided into four sections to collect the relevant information

Section-A of the Questionnaire focused on Background of the Respondents which were the biographical features of the participants involved.

Section-B also covers the research questions on the level of Safety Adherence through the implementation of Safety Training Programme on projects from the respondents in the study.

Section-C also focused on the Impacts of the Safety Training Programme Implementation on Project in the Company.

Section-D finally covers the challenges associated with the Implementation of the Safety Training program on projects in the Company.

#### **3.8 Data Analysis Techniques**

This Research Study adopted both the qualitative and quantitative methods. Quantitative method was used and data was analyzed, summarized with its findings presented in the frequency table to indicate respondent's responses with the use of descriptive statistical measure of mean with ranking was used but the qualitative method of the study data was summarized for findings analyses and description in a textual form.

#### Validity and Reliability of Data

To minimize data errors, raw data was examined for validity and reliability through sorting, editing and coding for meaningful, accurate and complete information.

#### **CHAPTER FOUR**

#### PRESENTATION OF RESULTS AND DISCUSSION

#### **4.1 Introduction**

The chapter entails the analysis and findings of data as well as presentation of the responses collected from the questionnaire to achieve the objectives of the study stated. Thirty-two (32) questionnaires were administered for the relevant information from respondents of the study but only Thirty (30) questionnaires were responded and returned. Therefore, the descriptive statistical measure of mean with the distribution tables in factor response of the Likert-type scale 'disagree' to 'agree' and 'Never' to 'Always' rating with 5-point scale was employed for ranking in the presentation, analysis and interpretation of the data of the study.

#### **4.2 Presentation of Background Information**

The Background information presentation of the Study covers the respondent's number of years in the Organisation, Division and occupation designation in their Company. The respondents were staff from the Operation and Safety Department at the Electricity Company of Ghana, Volta Regional Office.

#### **4.2.1** Division of the Respondent in the Company

Respondents in the study were from the Operations and the Safety Department at the Volta Region Electricity Company of Ghana to help assesses the impact of Safety Training implementation on Projects Performance in their Company as in indicated in Table 4.1 below.

Division	No of Respondents	Percentage
	(Frequency)	(%)
Safety	1	3.3
Operations	29	96.7
Total	30	100

Table 4.1 Shows the Division of the Respondent in the Company

#### Field Survey, August, 2019

From Table 4.1 above, out of the total number of Thirty (30) respondents, majority respondents were in the Department of Operation having the highest number of Twenty-nine (29) indicating 93.7% whilst One (1) respondents with 3.3% was in the department of Safety. With this, Respondents from the Operation Department has the highest responses to provide accurate responses to the questionnaire.

#### 4.2.2 No of years working in the Company

Respondents in the study were asked of the number of years they have worked with the company to know if there has been any implementation of Safety Programs on Projects in the Company and its impact on project performance throughout the years they were employed.

Years	No of Respondents (Frequency)	Percentage (%)
6-10	5	16.7
11-15	12	40
16-20	8	26.6
21 and above	5	16.7
Total	30	100

 Table 4.2 shows the Number of years working by the Respondent in the

 Company

Field Survey, August, 2019

With the number of working years in the company as indicated in the Table 4.2 above, majority respondents representing 40% with the total number of Twelve (12) has worked between 11 - 15 working years with the Company, whilst Eight (8) respondents of 26.6% have worked between 16-20 years and Five (5) respondents with 16.7% have worked between 6-10 years and 21 above years respectively. The response from the study indicates Five (5) respondents have the longest working years therefore they have experience in the implementation of the program on project in the Company and can help give accurate responses in the Study.

#### 4.2.3 Occupation Designation in the Company

The occupation designation was designed in the questionnaire to know the appropriate respondents involved in both safety training and projects in the Company as well as answering the questionnaire which address safety training on project in the Company. The responses are indicated below.

Designation	No of Respondents	Percentage
	(Frequency)	(%)
Project Supervisor	4	13.3
Project Engineer	2	6.7
Safety Officer	1	3.3
Draughtsmen	5	16.7
Maintenance Team	18	60
Total	30	100

 Table 4.3 Occupation Designation in the Company

#### Field Survey, August, 2019

Table 4.3 above indicates that, Maintenance Team were the highest respondents in the study to provide information on the impact of implementing safety training program

on project in the Company with a total number of Eighteen (18) representing 60%, followed by Five (5) Draughtsmen with 16.7% and in addition Four (4) respondents indicating 13.3% and Two (2) respondentsfor6.7% were Project Supervisor and Project Engineer (14.3) respectively. Whiles only One (1) respondent was a safety Staff.

## 4.3 Presentation on the Level of Safety Adherence through Safety Training Implementation

This presentation and analysis shows the responses using the Likert-type scale 'disagree' to 'agree' rating and ranking on a mean score to identify the level of safety adherence through the implementation of the Program from the Respondents in the study. The variables to determine the level of safety adherence were in eight factors. All the factors considered for safety Adherence stated below in Table 4.4 have mean scores 4.00 or above except inadequate resources of mean value 3.83. These factors were ranked using the mean score of 4.00 or above to be considered substantial for safety adherence.

		Frequency	Mean	Rank
No	Impact Statement	(N)		
1.	Provision of Safe environment for project	30	4.67	1 <sup>st</sup>
2.	It is the highest priority on projects	30	4.50	$2^{nd}$
3.	Safety awareness on Project.	30	4.33	3 <sup>rd</sup>
4.	Rewards are provided for safety adherence.	30	4.31	4 <sup>th</sup>
5.	Various Level of the Program are conducted.	30	4.23	5 <sup>th</sup>
6.	There are Management Commitment in the implementation.	30	4.20	6 <sup>th</sup>
7.	Punitive action are taken against employees who do not adhere safety.	30	4.00	7 <sup>th</sup>
8.	Inadequate resources	30	3.83	8 <sup>th</sup>

**Table 4.4 Safety Adherence through Safety Training Implementation** 

#### Field Survey, August, 2019

Based on the result in Table 4.4 above, it observed that majority of the respondents in the study considered provision of Safe environment on projects as the most significant factor to determine safety adherence through the implementation of the program with an average value of 4.67 being ranked as highest. Subsequently, priority on safety training program was considered as another safety adherence factor with an average mean score of 4.50 and also ranked the Second factor.

Based on this indication, there has been the safety awareness through the implementation of the program and this was also considered as third safety adherence factor by the respondents with an average mean of 4.33 and this denote that, the implementation of the program has created safety awareness on project and made safety to be adhered.

Based on Table 4.4 above, an average mean of 4.31 ranked fourthly indicates that employees are rewarded for safety adherence on project and has been considered as safety adherence factor. When safety is adhered on projects, reward incentive is presented to them as a source of motivation for others to also follow and observe it.

Respondents were asked whether various types of safety training program are conducted on projects to determine safety adherence. An average mean score of 4.23 ranked as the Fifth factor indicates that, various types of safety training program have been conducted on projects in the Company and this depends on the level and nature of the projects.

Also in the study, punitive actions taken against any worker who does not adhere to safety and Management Commitment through the implementation of the program was considered as another factors for safety adherence but ranked Sixth and seventh with an average mean of 4.20 and 4.00 respectively. However, management commitment

indicates less extent of agreement factor for safety adherence than expected in the Study, since it plays a major role for safety to adhere on projects in the company. As said by Beach (2000), management's commitment to safety plays a major factor in the success of safety programmes such as safety training in organisations. In order to reduce safety risk, an employer in a company must provide safe environment to work, training for employees and monitor to ensure adherence to safety regulation.

However, the responses in the study indicates that inadequate provision of resources during the implementation of the program does not yield much safety adherence since it was less considered as a factor because of it average mean value 3.83 which is below the required mean score stated for the study. Even as said by Mati and Paul, (2007) employees adhere to safety regulations when there is proper implementation of Safety Training with adequate resources.

#### 4.4 Presentation on the Impacts of Safety Training Programme Implementation

This analysis shows the responses from the Respondents for the study using the Likert-type scale 'disagree' to 'agree' to the extent of their agreement in ascertaining the impact on the implementation of Safety Training Programme on Project. In order to assess the impact of implementing safety training program on project, the responses were analysed using a descriptive statistical mean method of 5 scale point ranging from 1 being (Strongly disagree) to 5 (Strongly Agree) was used for the study. An average values range of 3.50 and above was considered for positive impacts factor whereas below 3.50 mean range was considered as the negative impact on project.

		Frequency		
No	Impact Statement	(N)	Mean	Rank
1.	Knowledge, attitude and safe work	30	4.83	1 <sup>st</sup>
	practices on Project.			
2.	Decreases additional cost (compensation	30	4.73	2 <sup>nd</sup>
	insurance)			
3.	Accident reduction rate and casualty on	30	4.67	3 <sup>rd</sup>
	a project.			
4.	Enhances productivity and schedule on	30	4.33	4 <sup>th</sup>
	the project activities			
5.	Affects project quality positivity.	30	4.00	5 <sup>th</sup>
6.	Aid the sustainability of the environment	30	3.70	6 <sup>th</sup>
	in my organisation.			
7.	Reduction of project risk.	30	3.50	7 <sup>th</sup>
8.	Delays the Organisation project	30	1.83	8 <sup>th</sup>
	schedules.			
9.	Increases project cost for the	30	1.67	9 <sup>th</sup>
	Organisation			
10.	Records of High casualty and accident	30	1.33	10 <sup>th</sup>

**Table 4.5 Impacts of Safety Training Programme Implementation on Projects** 

### Field Survey, August, 2019

It observed in Table 4.5, Majority respondents with a mean value 4.83 being ranked highly considered that the implementation of the program has impacted knowledge, safe work practices and attitude on project, hence it has resulted positive impact on the project performances. The respondents considered this factor the most significant impact on projects. When project members get an appropriate safety training for a project, it enhances their knowledge and attitude as well as behaviours to perform their activities in a safer way Goetsch, (2005).Hardly for an accident to occur when there has been proper implementation of the program on project. A study done by Sinclair et al. (2003) shows that the safety training has increased knowledge and reduced injuries.

Another major impact of project performances through the implementation of Safety Training Program was the additional cost being reduced. This was ranked the Second most positive impact factor for the implementation with a mean score of 4.73. Implementation of the program reduces the additional cost to the Company by paying compensation to injured employees as a result of any lawsuit being filed when it not complying with safety rules.

There has accident reduction and causality as a result of the implementation of the program and this has impacted positively on the project performances. This was indicated in Table 4.6 with a mean value of 4.67 and thirdly ranked as an impact factor in the implementation. Fatalities, injuries and disease contribute to the cost of workers' compensation insurance and cost of accidents are integrated into the project cost but the implementation help reduces such cost.

Subsequently, a mean value of 4.33 ranking fourth has also considered that the implementation has enhances productivity and help project to stay on track without it activities being delay. This is also an important factor because without the implementation, workers will not attained any productivity on the project activities.

In addition, the implementation of the program also has a significant impacts on the project by positively affecting the project quality, aided in a sustainable environments and reducing the project risk as it indicated in Table 4.5 above with a mean values of 4.00, 3.70 and 3.50 ranking from Fifth, Sixth and Seventh in the impact factors respectively. As stated by Burke et al. (2002) that engaging in safe work practices reduces risks and ensure the safety of other people living around the environment which you operate. Safety Training Program Implementation help in the successful completion of a project which includes completion on schedule, within budget, to quality requirements without damaging the environment as well as minimising

disease, fatalities or injuries on project. Safety training programme complements the technical performances because when it is implemented it enhances project quality, (Levitt and Samson 1993).

However, the implementation has also had other impacts on project in the company and these were considered as negative impact factor on project as in indicated in Table 4.5 with a mean value below the required value 3.50 to be considered as a positive factor. These mean values were 1.83, 1.67 and 1.33 ranked as 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> respectively. Even though, the implementation slightly delays project schedules which mostly can be seen when there are modification of the project design. Safety training program implementation reduces project cost but can also increase the project cost which entails salaries for safety and certain administrative personnel who are mostly outsourced in the company.

## 4.5 Presentation on the Challenges of Safety Training Programme Implementation

This last presentation and analysis indicates the responses from the Respondents of the study on the challenges associated with the implementation of the Safety Training Program on Projects in the Company using the Likert-type frequency scale 'Never to Always' to identify the frequency of challenges. The literature review provided challenges faced with the implementation and this was captured in the Questionnaire. Respondents in the Study were asked to indicate the frequency at which the company faces challenges in the implementation of Safety training program on projects and this was ranked using the mean scored.

Table 4.6 Challenges with Safety Training programme implementation onProjects

		Frequency	Mean	Rank
No	Challenges	(N)		
1.	Inadequate resources such as	30	4.67	1 <sup>st</sup>
	equipment.			
2.	Staff ignorance and negligence	30	4.33	2 <sup>nd</sup>
3.	Lack of periodic review	30	3.97	3 <sup>rd</sup>
4.	Safety training is a cost burden	30	2.73	4 <sup>th</sup>
5.	Low literacy and lack of Safety awareness.	30	2.17	5 <sup>th</sup>
6.	Lack of qualified personnel	30	1.97	6 <sup>th</sup>
7.	Lack of Management Commitment	30	1.83	7 <sup>th</sup>
8.	It represent a significant challenge on	30	1.80	8 <sup>th</sup>
	project.			

#### Field Survey, August, 2019

From the presentation of the result in Table 4.6 above, it is observe that Lack of adequate resources was the topmost challenge associated always in the implementation and this has affected safety adherence on projects. Majority respondents with an average value of 4.67 ranking first attest that, indeed lack of adequate resources has been a major challenge always facing the implementation of the program.

It can be further observed in Table 4.6, Staff ignorance and negligence was ranked Second major challenge in the implementation as concluded from the responses with mean value of 4.33. Staff negligence and ignorance has been a challenge and this has affected how safety is observed on projects. In addition with the challenges facing the implementation, respondents were asked if there has been lack of periodic review in the implementation which poses a challenge on projects and the result recorded in Table 4.6 above indicates that there has been lack of period review of safety training program on project with mean value of 3.97 being ranked the third challenge factor in the implementation of the programs.

It can be further observed in Table 4.6 that the provision of the program implementation has been sometimes a cost burden to the company on its projects and this poses less challenge as indicated with a mean score of 2.73. This means that the provision of the programs implementation are not always a cost burden to the Company in its implementation. As said by Ingalls, (2002) in a study conducted on 'safety performance measures', he found that there are high cost in providing health and safety materials and this sometimes discourages management to implement safety fully because it pose a challenge in the company.

From the presentation of the result in Table 4.13 above, a mean value of 2.17 has been considered by the respondents that the implementation of the Program does not represent any significant challenge on the project and as a result has been ranked as the Fifth. With this, respondents attest that even though the implementation is a challenge on a project, it is not a significant one but occasionally represent one on project.

Even though, lack of qualified personnel, low literacy and lack of safety awareness and management commitment has been considered as challenge factors in the implementation on projects, it has rarely been a major challenge as shown in Table 4.6 with mean values of 1.97, 1.83 and 1.80 ranking 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> respectively. These can be as a result of some existence of qualified personnel, safety awareness and management commitment through the program.

#### **CHAPTER FIVE**

#### SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATION

#### **5.1 Introduction**

The study assesses the impact of Safety Training Program on Project Performances at the Electricity Company of Ghana Volta-Region. This chapter presents the findings in summary, conclusions drawn based on the result of the Study and recommendations provided to aid in the implementation of Safety Training Programme on Project in an Organisation.

#### **5.2 Findings Summary**

These findings are information retrieved from the respondents of the Study on the impacts of the implementation of Safety Training Programme on Projects at the Electricity Company of Ghana, Volta-Region.

# 5.2.1 Level of Safety Adherence through Safety Training Programme implementation

Although in the Study, the company provides Safe environment and safety training programme being the highest priority on projects with the safety awareness being created, existence of reward and punitive action for safety adherence as well management commitment with various types of safety training programme being implemented on projects in the company, Safety procedures and instructions through the implementation of the programs are still not being adhered on projects, this was as a result of adequate resources such as equipment not fully provided during the implementation on projects in the Company which makes it difficult for employees to observe. There has been an attainment of Safety adherence through the

implementation of safety training programme as result of the factors considered by the respondents but safety adherence have still not be achieved fully, even as said by Mati and Paul (2007) employees adhere to safety regulations when there are proper implementation of Safety Training programme with adequate resources.

# 5.2.2 Level of Impact on Safety Training Programme implementation on Projects.

The study reveals that, there has been an implementation of the program on projects in the Company which has impacted knowledge of the workers, created safety awareness, and safe work practices, productivity on project activities, has also affected how project are being executed in an environment which aid in sustainability, decreases additional cost on the project such as compensation insurance to any member of the project who is affected on the project as a result of accident. When project members get an appropriate safety training for a project, it enhances their knowledge and attitude as well as behaviours to perform their activities in a safer way Goetsch, (2005).

Safety Training Programme Implementation has help in the successful completion of a project which includes completion on schedule, within budget, to quality requirements without damaging the environment as well as minimising disease, fatalities or injuries on project. A study done conducted through Sinclair et al. (2003) shows that safety training has increased knowledge and reduced injuries at work.

However, respondents with average mean value of 1.83, 1.67, and 1.33 opposes that, the implementation of Safety Training Program has negative impacts on projects and these are the project cost increment, delays of project schedules and the records of high casualty and accident on projects in the Company. These indicates that even though, the implementation of the programme yield positive impact on project, which also affects the projects negatively but in the Study the findings revealed that, the positive impacts prevail over the negative impacts which make the implementation significant on project performances.

#### 5.2.3 Challenges of Safety Training Programme Implementation

Information gathered in study revealed that, the company's Safety training programme has challenges in its implementation on projects and these were indicated by the respondents that lack of adequate resources such as equipment to train workers through the program, Staff ignorance and negligence to adhere to the safety instructions or procedure and lack of periodic review are always challenges associated with the implementation whereas low literacy and lack of Safety awareness and the provision of safety program implementation often poses a challenge.

The study also revealed that, although the implementation of Safety Training programme faces major challenges on projects, lack qualified personnel and Management Commitment not all the time becomes a challenge in the implementation of the program.

Above all, the implementation of Safety Training Programme does not represent a significant challenge on project in the company as the information in the study revealed by an average mean value 1.80 and ranked lastly in the Study.

#### **5.3** Conclusion

It was observed in the study that, even though the Electricity Company of Ghana provide safe environment with management commitment for the implementation of safety training program on projects, it still lack adequate resources provision such as equipment to use in the implementation of the program for safety to be adhere with lack of periodic review. However, it is concluded that Staff ignorance and negligence towards the implementation of safety training programme is influenced negatively on the safety adherence and this affects how workers performs on the projects despite the fact they have been trained safely. Above all, the implementation of Safety training programme has positive impacts which improves projects performances in the company.

#### **5.4 Recommendation**

Management of Electricity Company of Ghana must review periodically to check if the resources allocated are fully utilised in the implementation of safety training program by the appropriate workers participating on the projects. This periodic review will help them identify any training needs and gaps that evolve on the projects and address them quickly.

There must be an adequate provision of resources such as the PPE, tools and equipment's to the participants undertaking the training on the projects as it will help them to understand the concept of safety procedures for safety adherence on projects in improving project performances.

Management of the Company should initiates regular monitoring team to check safety adherence through the implementation of safety training program with strict safety measures put in place for safety to be adhere no matter who the person is on the projects.

Even though, safety Training Programme creates safety awareness there is a need for employees in the Company to change their behaviors and develop the right attitude in observing safety rules, regulations and instructions through the program.

## **5.5 Further Studies Recommendation**

Further studies should be undertaken on the operational activities and projects in an Organization in order to compare the two impacts of the implementation of Safety Training Programme on Organisation performances.

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#### APPENDIX

#### KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY DEPARTMENT OF CONSTRUCTION TECHNOLOGY AND MANAGEMENT INTRODUCTORY LETTER

#### Dear Sir/Madam,

#### **INVITATION TO PARTAKE IN A SURVEY (RESEARCH)**

As part of my partial fulfilment for the award of MSc. Project Management, I am undertaking a research study on a topic 'The Impact of Safety Training Programme Implementation on Project Performance at the Electricity Company of Ghana' with an objectives

- 1. To identify the level of Safety adherence through Safety Training Programme implementation on the Organisation Project.
- 2. To identify the level of impact in the implementation of Safety Training Programme on the Organisation Projects performances.
- 3. To identify challenges affecting the implementation of Safety Training Programme on the Organisation Projects.

Please, attached is a copy of my Research Questionnaire to assist in assessing the Impact of Safety Training Programme Implementation on Project Performance in your Company, Electricity Company of Ghana. The purpose of the study is solely academic and assured that all the information provided will be treated confidentially. You assist by responding sincerely to this questionnaire needed to achieve the objectives of the Research Study stated by ticking  $(\sqrt{})$  in the appropriate box. Counting on your cooperation.

Thank you, for your participation in filling the questionnaire.

#### **ESTHER ANITA EMPEH**

#### **Department of Construction Technology and Management-KNUST**

(nitashy@yahoo.com/0243667948)

#### MR. JAMES DANKU Project Supervisor Department of Construction Technology and Management –KNUST

#### SECTION A: RESPONDENT'S BACKGROUND

- 1. Please indicate briefly your Department in the Organisation
  - A. Operation B. Safety D. Others (Specify)
- 2. The Working Experience in the Organisation

A 1 – 5 years [] B. 6 – 10 years [] C. 11 – 15 years [] D. 16 – 20 years [] E.21 years + []

3. Please indicate your Occupational Designation

A. Project Supervisor B. Safety Officer C. Project Engineer D. Draughtsman

E. Maintenance Team

## **SECTION B: LEVEL OF COMPLIANCE OF SAFETY TRAINING**

### **PROGRAMME**

The questions designed below are to test for the level of Safety Adherence through Safety Training Program Implementation in the Organisation and on your agreement, please state or also indicate the following statements by ticking ( $\sqrt{}$ ) on the scale that reflects the extent to which you agree or disagree to the following questions. Kindly rate using the scale from 1-5.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	_		_	

		Strongly	Disagr	Neutra	Agre	Strongly
NO	Statement	Disagree	ee	1	e	Agree
1.	The Company provides a Safe					
	environment for project					
2.	There is Management					
	Commitment in the					
	implementation of Safety					
	Training.					
3.	Adequate resources are					
	provided in safety training and					
	Safety regulations are adhered					
	to.					
4.	Various Level of Safety					
	Training Program are					
	conducted by the Organisation					
	on Projects.					
5.	Safety training program has a					
	highest priority on projects at					
	my workplace.					
6.	The implementation of Safety					
	Training Programs has created					
	Safety awareness on Project.					
7.	Employees who are trained on					
	safety but do not comply with					
	its regulations on project are					
	disciplined by the Organisation.					
8.	Employees on projects are					
	rewarded as a result of safety					
	adherence in safety training					
	implementation.					

## SECTION C: LEVEL OF IMPACT ON SAFETY TRAINING PROGRAMME IMPLEMENTATION

The questions formulated below are to seek information on the Impact of Safety Training Program Implementation on Project in the Electricity Company of Ghana. Please rate or indicate your agreement or disagreement to the following questions from the scale of 1-5 in the Table below.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

No		Strongly		Neutral		Strongly
	Impact Statement	Disagree	Disagree		Agree	Agree
	The Implementation of Safety Training					
1.	affects the project quality positivity.					
	Safety training Program implementation					
2.	enhances productivity and schedule on					
	the project activities					
	Safety Training Program					
3.	implementation impact on accident					
	reduction rate and casualty on a project.					
	Safety Training Program has impacted					
4.	on knowledge, attitude and safe work					
	practices in Project at my Company					
	The Implementation of Safety Training					
5.	Program decreases additional cost					
	(compensation insurance) on projects in					
	Company.					
	The Implementation of Safety Training					
6.	on projects and the sustainability of the					
	environment in my organisation.					
7	There has been reduction of project risk					
7.	as a result of the Implementation of					
	my Organisation					
	The Implementation of Safety Training					
8	Program increases project cost for the					
0.	Organisation					
	The Implementation of Safety Training					
9.	Program delays the Organisation project					
	schedules.					
	High casualty and accident rate has been					
10.	recorded as a result of the					
	implementation of safety training					
	program on Project in my Company.					

#### SECTION D: CHALLENGES OF SAFETY TRAINING IMPLEMENTATION

The questions seek for information on the challenges related with the Implementation of Safety Training Program on Project at the Electricity Company of Ghana. Please state or indicate in an ordered response option the frequency on the challenges associated in implementing Safety Training Program with the following questions in the Table below.

No	Challenges	Never (1)	Rarely (2)	Sometime s (3)	Most of the Time	Alway s (5)
	Safety Training Program				(4)	
1	implementation represents a					
1.	significant challenge on project in					
	the company					
	The provision of safety training					
2	with it implementation is a cost					
2.	burden on the organisation					
	Staff ignorance and negligence on					
3	adhering to the instruction pose a					
5.	challenge in implementation of					
	the program					
	Lack of resources at the training					
4.	programs on project is a challenge					
	to the implementation of Safety					
	Training.					
	There has been Lack of					
5.	Management in the					
	implementation of Safety program					
	in my company.					
	Lack of qualified personnel for					
6.	the implementation of Safety					
	Training Program has also been a					
	challenge					
7.	Low literacy and lack of Safety					
	awareness also poses challenge in					
	the implementation					
8.	There has been Lack of review in					
	the implementation of the					
	program and is a challenge.					