



**St. Mary's** ቅድስት ማርያም  
University ዩኒቨርሲቲ  
**committed to excellence**

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

**ASSESSMENT OF PPE MANAGEMENT PRACTICES IN PETROLEUM  
AND PETROLEUM BY PRODUCTS DISTRIBUTOR COMPANIES IN  
ETHIOPIA A CASE STUDY OF TOTAL ETHIOPIA S.C.**

**PREPARED BY**

**YISHAK AYELE**

**ID/No: SGS/0535/2011A**

**ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES  
MBA ACCOUNTING AND FINANCE**

**ADVISOR: SIMON TAREKEGN (Associate Professor)**

**JUNE 2020  
ADDIS ABABA**

**ASSESSMENT OF PPE MANAGEMENT PRACTICES IN PETROLEUM  
AND PETROLEUM BY PRODUCTS DISTRIBUTOR COMPANIES IN  
ETHIOPIA A CASE STUDY OF TOTAL ETHIOPIA S.C.**

**BY**

**YISHAK AYELE SGS/0535/2011A**

**A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF  
GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF MASTER OF BUSINESS  
ADMINSTRATION ACCOUNTING AND FINANCE**

**JUNE 2020**

**ADDIS ABABA**

## DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Simon Tareke (Ass. Professor). All source of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Yishak Ayele Bekele

Name

---

Signature

**St. Mary's University, Addis Ababa**

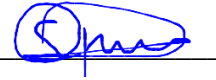
**June 2020**

## ENDORSEMENT

This thesis has been submitted to St. Mary's University, school of Graduate Studies for examination with my approval as a university advisor.

Simon Tareke

Research Advisor:



Signature

**St. Mary's University,**

**Addis Ababa**

**August, 2020**

**ASSESSMENT OF PPE MANAGEMENT PRACTICES IN PETROLEUM  
AND PETROLEUM BY PRODUCTS DISTRIBUTOR COMPANIES IN  
ETHIOPIA A CASE STUDY OF TOTAL ETHIOPIA S.C.**

**BY  
YISHAK AYELE**


**APPROVED BY BOARD OF EXAMINERS**

\_\_\_\_\_  
Dean, Graduate Studies

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Simon T.  
Research Advisor

  
\_\_\_\_\_  
Signature


August 18,2020  
Date

Dr. Misrak Molla  
External Examiner

  
\_\_\_\_\_  
Signature

August 18,2020  
Date

Abraham Gebre Giorgis  
Internal Examiner

  
\_\_\_\_\_  
Signature

August 15,2020  
Date

## **ACKNOWLEDGEMENT**

First and for most, I would like to thank the Almighty God and his mother St. Mary and St. Tekle Haymanot (Abuyee) for blessing my life and work.

I wish to express my sincere thanks my advisor Simon Tareke (Ass. Professor) for his constant assistance and encouragement during my dissertation research. With his guidance, I selected my topic and developed the intellectual framework of PPE (property, plant, and equipment) management system, which is a central part of my dissertation. Sometimes I do not have word to express his unlimited guidance, question, and alert call.

I am grateful for Total Ethiopia management team and employees fore they willingly spend their precious time during the process of filling the questionnaire and interviews.

Furthermore, I express my thankfulness to my family and my classmate Tewodros Seyoum and group members, Ashenafi Haile (FCCA) who have provided valuable contribution towards the successful completion of this MBA program.

## Table of Contents

DECLARATION .....	iii
ENDORSEMENT.....	iv
ACKNOWLEDGEMENT .....	vi
List of Abbreviation’s and Acronyms.....	x
List of tables.....	xi
List of figures.....	xii
Abstract.....	xiii
Chapter One .....	1
Introduction.....	1
1.1 Background of the study .....	1
1.2 Statement of the problem .....	3
1.3 Research question.....	4
1.4 Objective of the study .....	5
1.4.1 General Objective .....	5
1.4.2 Specific Objectives .....	5
1.5 Significance of the study.....	5
1.6. Scope of the study .....	6
1.7 Limitation of the study .....	6
1.8 Organization of the paper.....	6
Chapter Two.....	8
Literature review .....	8
Introduction.....	8
2.1 Theoretical Literature .....	8
2.2 Definition of Asset .....	8
2.3 Property, Plant and Equipment.....	8
2.4 Need of PPE Management .....	9
2.5 Asset Management System .....	9
2.6 PPE management.....	10
2.6.1 Strategic Asset Management.....	10
2.6.2 Tactical Asset Management.....	10
2.6.3 Operational Asset Management.....	11

2.7 Asset management cycle .....	11
2.8 Acquisition of PPE .....	12
2.9 Commissioning of Fixed Asset .....	13
2.10 Maintenance of PPE .....	13
2.11 Disposal of PPE.....	15
2.12 Valuation of PPE.....	15
2.13 Asset management information system.....	16
2.14 Characteristic of PPE .....	16
2.14.1 Tangible .....	17
2.14.2 Used in Operation .....	17
2.14.3 Long term life .....	17
2.14.4 Capitalized Cost.....	17
2.14.5 Depreciation.....	17
2.15 Empirical Literature .....	18
2.16 Summary and Literature Gap .....	19
Chapter Three.....	21
Research Methodology.....	21
3.1 Introduction .....	21
3.2 Research Design.....	21
3.3 Target Population .....	21
3.4 Data Type and Source .....	22
3.5 Data Collection Method .....	22
3.6 Data analysis techniques .....	22
3.7 Data validity and reliability of instruments.....	22
3.8 Ethical considerations .....	23
CHAPTER FOUR.....	24
DATA PRESENTATION AND ANALYSIS.....	24
4.1. General overview .....	24
4.2. Respondent Rate.....	24
4.3 Profile of the Respondents .....	25
4.3.1 Educational background of Respondents.....	25
4.3.2 Work Experience of the respondent.....	26



4.4 Study results from the collected data for PPE management practices .....	27
4.4.1 Assess the techniques and methods of PPE acquisition.....	28
4.4.2 identify the process of PPE maintenance.....	33
4.4.3 To assess the system of PPE registration and disposal from the system .....	37
4.4.4 To assess the company doing physical PPE verification .....	40
4.4.5 identify the planning of PPE valuation and system control.....	43
CHAPTER FIVE .....	46
SUMMARY, CONCLUSION AND RECOMMENDATION .....	46
5.1 Introduction.....	46
5.2 Summary .....	46
5.3 Conclusion .....	48
5.4 Recommendation .....	49
Reference.....	51
Appendix I questionnaire .....	53
Appendix II Interview .....	59
Appendix III Confirmation letter .....	60

## **List of Abbreviation's and Acronyms**

B2B	Business to Business
CSR	Corporate Social Service
FAEM	PPE Equipment Maintenance
FAR	PPE Register
HSEQ	Health Safety Environment and Quality
IAS	International Accounting standard
IFRS	International Financial Report Standard
NWD	Net Work Department
ROC	Rapid Oil change
PAS	Publicly Available Specification
PPE	Property Plant and Equipment
TESC	Total Ethiopia Share Company

## **List of tables**

Table 3.1 Reliability Statistics .....	23
Table 4.1: Assess the techniques and methods of PPE acquisition.....	32
Table 4.2: Identify the process PPE maintenance, .....	36
Table 4.3: Assess the system of PPE registration and disposal from the system.....	40
Table 4.4: Assess the company doing physical PPE verification .....	42
Table 4.5: Identify the planning of PPE valuation and system control.....	45

## **List of figures**

Figure 2.1 Asset management is a support system for a business .....	9
Figure 4.1: Educational Position of the respondent .....	25
Figure 4.2: Educational background of the respondents .....	26
Figure 4.3: Work Experience of the respondents.....	27

## **Abstract**

*In the highly competitive and customer-oriented oil and gas industry in Ethiopia, organizations need experience increasingly, higher demands for efficiency and optimization of performance. Thus, it can be understood that the ability of PPE management playing dominant role in entire business the firms have realized the effective utilization of PPE. The overall objective of this study was to assess PPE management practice of Total Ethiopia share company. The study was conducted using formal survey in which a total of 10 interviews and 62 questionnaires were distributed out of these 59 questionnaires are returned. It is a descriptive study using qualitative data that describes how the property, plant and equipment are managed and controlled. Primary data sources were used to gather information for this study. The data collection instruments issued for this study are interviews and questionnaires. The methodology for this study is population census based on to assess of PPE management practice. The findings of this research will provide the weaknesses at the implementation of fixed asset management. It will help the manager to make the fixed asset management strategy and determine strategic steps in optimizing. And it also helps the employee who have direct relationship with PPE management and follow up can assess their attitude and practice in terms of the property management science and practice. The results showed that the PPE management at the total Ethiopia S.C. had been carried out 'well.'*

*Key words: PPE management; Property plant and Equipment; company owned asset*

# Chapter One

## Introduction

This chapter introduce about the core subject of the study means PPE management practice by addressing background of the study, statement of the problem, research questions, objective of the study, Significance and scope of the study, and finally limitation of the study will be discuses in the last section of this chapter.

### 1.1 Background of the study

PPE management specification PAS 55 identifies the following types of asset within organizations: Financial, physical, human, information, and intangible assets. Assets of the types which are considering here are physical items such as plant, machinery, buildings, vehicles, pipes and industrial equipment, and associated information and technical control and software systems that are used to serve a business function. At the outset, and given that asset management links closely with financial management, it is important to recognize the accounting definition of assets, and in particular the split between fixed and current assets (Nursalam, 2016).

PPE Management is systematic and coordinated activities and practices through which an organization optimally and sustainably manages its assets and asset systems, their associated performance, risks, and expenditures over their life cycles for the purpose of achieving its organizational strategic plan. And the set of activities associated with identifying what assets are needed, identifying funding requirements, acquiring assets, providing logistic and maintenance support systems for assets, disposing or renewing assets so as to effectively and efficiently meet the desired objective (PAS-1 2008).

From this point of view, the definition of asset management encompasses a broader and quite different set of activities from “maintenance”, which is primarily concerned with keeping existing equipment in operating condition. Asset management was introduced to manage the most important and valuable assets of the organization. The main objective of the asset management process in company is geared more toward monitoring economic performance and customer responsiveness than system performance the company, although safety is one of the primary

concerns in the process. company's frequent and regular testing optimizes the economic performance of physical assets (Agnes Cheng & Lin, 2009).

PPE is defined as a tangible item of property, plant or equipment held by the company for use in the productions or supply of goods or services, for rental to others, or for administrative purposes, and which is expected to be used during more than one reporting period (financial year). A PPE is thus an asset, either movable or immovable, under the control of the company, and from which the company reasonably expects to derive economic. When PPEs are acquired, their cost cannot be counted as an expense for tax purposes in the year of acquisition. When we buy or sell PPEs we are regarded as having swapped one asset – money – for another asset, a machine. Only the depreciation of the machine in any given year is an expense in the year. This is important as far as tax treatment is concerned (Liapis & Christodouloupoulou, 2011).

The purpose of the PPE management function is to provide resources and expertise to support the acquisition, in-service support and disposal of the physical assets required by the organization. A central asset management function will be needed at company level, providing inputs to asset planning, taking a role in major acquisitions and developments, and providing the systems and facilities needed to support assets throughout their life. Asset management is distinct from operations and does not usually involve the direct design or building of the assets themselves. It is also normally distinct from maintenance, but the technical services functions which support maintenance are part of asset management. The exact terminology and reporting structures may vary from organization to organization (Lepani, 2008).

PPE management is an approach to retain a top position in the industry and to obtain competitive advantages in the market. The purpose of this study is to assess how PPE management practice going on one of petroleum and petroleum by product companies in Ethiopia in the case of Total Ethiopia S.C.

## **1.2 Statement of the problem**

The objectives and goals of PPE management are determined by the objectives and goals of the asset 's owner. PPEs are held and managed for two different purposes. One purpose is to consider PPEs as commercial investment. The other purpose is to consider PPEs as an assisting mechanism for the owner to fulfill the major objectives of manufacturing products and/or delivering services (Lu, 2011).

A good PPE management solution is critical to running a successful oil and gas company business. PPE management is at the core of this asset-intensive business, and oil and gas companies cannot operate safely and effectively without it. Most asset management environments have grown sporadically over time and have many independent moving parts that have been cobbled together; these systems require an overhaul to ensure the various parts are tightly integrated and to establish good feedback mechanisms for continuously managing change and adding new capabilities (Niven, 2015).

The importance of properly managing PPEs is often overlooked by businesses. Because of the time and manpower required to inventory and track fixed assets, this part of the business is often ignored. Yet assets like land, buildings, transportation, and manufacturing equipment represent the largest investments most companies make. While sound PPE management can lead to a substantial tax savings in depreciation deductions, poor PPE practices can threaten the accuracy of financial reports, causing re-reporting and negatively impacting the bottom line (Nagaraju, 2018).

Related studies in the area include Susan S Ekoh,(2015), Dubinina (2008) and Hillesøy Kallevåg sept.(2015) their focus on other parts of the sector like refinery and extraction of oil and gas with the impact of the environment and human effect and depend on one of the cycle of PPE management specifically on condition base maintenance using Nobel technological instruments this is not incorporated the other parts of the cycle.

There are similar studies in Ethiopia in PPE management practice on government sectors and banking industry but not in oil and gas industry. In petroleum companies, requested huge investment amount of money and intensive investment for establishment and to facilitate the service: like construction of number of service station in the country, aviation depot and building



of huge storage of fuel and Jet A depot and lubricants oils storage other PPEs for the establishment of the business.

In Ethiopia, companies have registered to work on petroleum and petroleum by product distribution business selling price of fuel and lubricant regulated by the government, but the companies established for profit. To the best knowledge of the researcher prior researchers have not covered all PPE management process in petroleum and petroleum by product companies. Now the study is interested in this topic and company to assess the practical process of full cycle of PPE management: acquisition of new asset, maintenance and usage, physical asset verification, asset disposal and overall controlling of the system.

The study needs to show clear system of PPE management in the petroleum and petroleum by product distributor company and try to contribute something to fill the knowledge gaps by addressing acquisition, utilization, maintenance, valuation, disposal, physical verification and asset movement management to increase the company's PPEs turnover ratio. Therefore, the main reason of this study is to assess the problems that are related to the practice of PPE management of the Total Ethiopia share company.

### **1.3 Research question**

Based on the statement of the problem, the following research questions are used to investigate the current practices of PPE management in the organization.

- ❖ To what extent is PPE management related to the technique and methods of acquiring new asset?
- ❖ What are the steps and follow up for the maintenance of fixed asset?
- ❖ How much are the company's plan and procedure aligned to add new asset in the system and to remove from the system?
- ❖ What is the benefit of PPE physical verification to the company PPE management practice?
- ❖ What is the contribution of PPE valuation and system control on the company asset management?

## **1.4 Objective of the study**

### **1.4.1 General Objective**

One of the goals of effective PPE management system and control implementation in the organization is to retain a top position in the industry and obtaining competitive advantage from the companies. So that the overall objective of the study:

The general objective of the study is to assess PPE management practices in petroleum and petroleum by products company in Ethiopia the case of Total Ethiopia S.C.

### **1.4.2 Specific Objectives**

- ❖ To assess the techniques and methods of PPE acquisition.
- ❖ To identify the process PPE maintenance.
- ❖ To assess the system of PPE registration and disposal from the system.
- ❖ To assess how the company doing physical PPE verification.
- ❖ To identify the planning of PPE valuation and system control.

## **1.5 Significance of the study**

The significance of this paper also aimed at describing and analyzing PPE management practice learning in Total Ethiopia S.C. The study, therefore focused on how firms understood and implemented PPE management practice along polices, procedure and government regulation. The study outcomes are expected to serve as a base for better understanding and implementation of PPE management practices in the firm to earn high profit. In general, this study gives Total Ethiopia S.C. and other firms the following benefit and the way forward:

1. The right way of PPE management system implemented in the company.
2. Methods of recognizing and carry out PPE acquisition process.
3. To extent companies do there plan to have new fixed asset.
4. To review detail content PPE management manual, policy, and procedures of the company.
5. Utilization and control PPEs are in the company to maintain the profitability.
6. Implementation of maintenance and disposal of PPE process according to the procedure and policy of the company with the science of asset management.

Hence this study provides and pave ways for Total Ethiopia S.C. and other firms to easily managed their PPE and to get more return. In addition, other researcher can also use this study as springboard for further and detail studies.

### **1.6. Scope of the study**

To achieve the objective of the study, the study was focused on the assessment of PPE management practice of petroleum and petroleum by products distributor in Ethiopia specifically on Total Ethiopian S.C. in Addis Ababa Head Office. The study focused on PPE management practices by analyzing all the concept of acquisition, utilization, maintenance, valuation, verification, disposal, and system administration of company's asset. According to the methodology the study used descriptive research while quantitative and qualitative data analysis.

### **1.7 Limitation of the study**

In undertaking this research, the study was faced with the following limitations:

- ❖ This study has different stakeholders such as company, dealer of service station and different project owners who use the property of the organization by consignment out of this the study was conducted only on the Head office of the company due geographical limitation and Covid-19 pandemic. So, the study has not included the practice and opinion of the customers who use by the assets.
- ❖ The study is case study of only one petroleum and petroleum by products distributor in Ethiopia, so, the observation and the conclusion cannot be generalized all companies in the industry.

### **1.8 Organization of the paper**

This research paper is organized in five chapters each combined topics and subtopics. Chapter one provides the necessary background of the study, the research problems, and the research questions. It also describes the objectives, scope, significance, limitations of the study and organizational of the paper. Chapter two builds on this and reviews much of the pre-existing literature on PPE management practice by different scholars. It also forms the theoretical basis and constructs an analytical framework drawn from the theoretical concepts. Chapter three deals with research area description, methods of the study such as research strategy. It also describes the tools for sources

of data, data type and data analysis techniques. Chapter four is the core of this study, which presents the data collected statistical analysis. Chapter five, finalizes the study with summary, concluding points and by drawing some recommendations.

## **Chapter Two**

### **Literature review**

#### **Introduction**

This chapter gives an opportunity to understand the different opinions by various authors on PPE management practice. Literatures reviewed in this section has been obtained from secondary sources and reviewed in relation to the objectives of the study.

#### **2.1 Theoretical Literature**

There are different theoretical literatures and concepts on PPE management practice of organizations like concept of Asset and management cycle, characteristics of asset, different techniques asset management, Acquisition, control, and PPE practices, asset valuation asset disposal asset movement as discussed below:

#### **2.2 Definition of Asset**

An asset can be defined as something that may have economic value, commercial value, or exchange value, owned by business entities, institutions, or individuals (Siregar, Doli D.,2004). An asset can be categorized into four types: current asset, permanent investment, PPE, and others asset. (William D. Brady, 2001) contends that PPEs can be any item costing a certain dollar amount, large or small, to an item that has a certain useful life i.e. a tangible asset that have a useful life of more than 12 (twelve) months.

#### **2.3 Property, Plant and Equipment**

A PPE (also called a non-current asset) is a physical item which has value over a period exceeding one year, for example, land, buildings, plant, and machinery. When PPEs are acquired, their cost cannot be counted as an expense for tax purposes in the year of acquisition. When we buy or sell PPEs we are regarded as having swapped one asset—money—for another asset, a machine, for example. Only the depreciation of the machine in any given year is an expense in that year. This is important as far as tax treatment is concerned. Planning for the acquisition or disposal of PPEs involves the Capital Expenditure budget or CAPEX (Nicholas A. J. Hastings ,2015).

## 2.4 Need of PPE Management

PPEs plays very important role in relating company's objectives the firms. These PPEs are not convertible or not liquid able over a period the total owner funds and long-term liabilities are invested in fixed assets. Since PPEs playing dominant role in total business the firms have realized the effective utilization of fixed assets. So, it is very much important to understand the analyzing and properly utilized PPEs effects long term sustainability of the firms which may affect liquidity and solvency and profitability positions of the company. The idle of PPEs lead a tremendous in financial cost and intangible coat associate to it. So there is need for the companies to evaluate PPEs performance analysis time to time by comparing with previous performance, Comparison with similar company and comparison with industry standards. (Nagaraju, 2018)

## 2.5 Asset Management System

A basic illustration of the role of physical assets and of asset management within an organization is shown in Fig. 2.1. There we see that the key driver is customer demand which lead to business objectives and business plans. To meet the business objective, we need business operations which require the support of physical assets. Asset management works to provide assets to support the business operations. This requires an asset management system which supports asset planning, acquisition, maintenance, and logistics. Other support services such as information technology, financial and legal services are also required across all the activities (Nicholas A. J. Hastings ,2015).

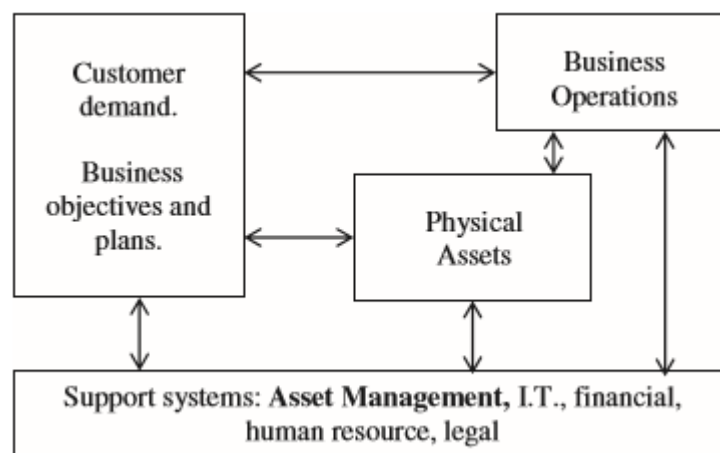


Fig.2.1 Asset management is a support system for a business

## **2.6 PPE management**

The scope of PPE management extends from establishment of an asset management policy and identification of service level targets as per requirements of stakeholders, to controlling daily operations of assets aimed at meeting the defined levels of service, to managing relationships with external businesses involved in maintenance and management of assets. Asset managing organizations, therefore, are required to cope with wide range of changes in the business environment. PPE management can be classified into three levels, i.e. strategic, tactical, and operational.

### **2.6.1 Strategic Asset Management**

Asset management has evolved from the humble beginnings of maintenance of plant and machinery and related functions (Sethi and Sethi, 1990 ) to an approach that is equally as important and essential as total quality management aimed at reliability and efficiency of the organization (Narain et al. 2000 cited on (Haider, 2013)). Asset lifecycle strategic planning typically has a 10-25-year horizon for financial planning purposes, although organizations may look well beyond this period to fully assess the optimum lifecycle strategies (IIMM 2006). Strategic asset lifecycle planning translates legal and stakeholder requirements into service outcomes; thereby allowing for an overall long-term vision of managing assets.

Public sector organizations may give more weighting to environmental, social, and economic factors in determining strategic goals, whereas private sector asset owners will typically place most emphasis on economic factors (IIMM 2006). However, it is the agreement on levels of service in terms of criteria such as quality, quantity, timeframes, and cost that provides the link between strategic and tactical plans.

### **2.6.2 Tactical Asset Management**

Tactical level planning involves the application of detailed asset management processes, procedures, and standards to develop sub-plans that allocate resources (both financial and non-financial) to achieve strategic goals by meeting defined levels of service. Depending on an organization's purpose, tactical plans may have varying priorities, for example, owners of infrastructure assets are usually more (and in a much direct way) concerned with asset operations and management plans and customer service plans, which then provide the foundation for other tactical plans, such as maintenance resources acquisition and management plan. The fundamental

aim of tactical asset management is to cost-effectively achieve the organization's strategic goals in the long-term. (Haider, 2013)

### **2.6.3 Operational Asset Management**

Operational plans generally consist of detailed implementation plans and information framework to enable these plans. These plans usually have a 1-3-year outlook. These plans provide direction to the organization on annual or biannual basis and are concerned with practical rather than visionary elements. According to IIMM (2006) operational plans typically include aspects, such as:

- a. operational controls to ensure delivery of asset management policy, strategy, legal requirements, objectives, and plans.
- b. asset workload specification, condition monitoring, and process control.
- c. structure, authority, and responsibilities for asset management.
- d. Staffing issues - training, awareness, and competence.

Operational plans work as practical translations for priorities arising from tactical plans to deliver cost effective levels of service.

### **2.7 Asset management cycle**

To obtain more knowledge about asset of an organization, it is essential to acknowledge and understand the life of cycle of assets. Organization manage numerous different types of assets. Decision concerning PPE have a long-term implication. Therefore, it is supportive to divide different phase in term of their life cycle. The asset life cycle approaches are used within the organization to understand the full impact of an asset purchase or disposition better. The aim is to enhance the quality and the length of asset life (Campbell jardine & McGlynn, 2011) the life cycle of an asset can be divided into the following four phases:

1. Acquire this phase cover the identification of the need of a new asset the strategy of an organization needs to be scrutinized to ensure a proper acquisition. This is also called the plan phase



## 2. Commission

In this phase the asset is constructed, tested and will eventually be fully functional.

## 3. Operate

The phase where an asset spends the most time in. The asset provides the function for which it was designed. In the case of a fixed asset, this phase could last decades. The asset will be maintained and monitored to meet any change in condition.

## 4. Disposal

This phase involves a decision about the disposal of, retirement and liquidation of an asset. Now an asset is acquired it is often too hard to consider the future disposal value.

The life cycle of an asset approaches aims to support organizations expanding their views and understanding of an asset. A further insight into how assets are acquired, operated, maintained and eventually disposed can improve the completeness and accuracy of asset management.

## **2.8 Acquisition of PPE**

Procurement of PPEs is an important factor in the Oil and Gas industry because it involves heavy investment. In the Oil and Gas industry, land and buildings and plant and machinery are purchased at initial stages and expansion of capacity takes place at later stages. Construction of buildings for the Oil and Gas industry involves major activity and these are constructed at the initial stage and additional buildings construction is taken up whenever the necessity arises. As these activities require huge investments, the decision for purchase construction deserves careful consideration. Apart from the telecommunications industry and brewing sector, the oil and gas industry has been the largest source of Foreign Direct Investment (FDI) in the country. Such investment includes a huge amount of capital to build fuel depots and aviation depots for the purchase of refueling trucks and to fulfill the minimum requirement of government to build service stations in the country. This helps for the manager's decision on acquisition of PPE for expansion or retention as it is (Kimmel, et al., 1998).

PPE is recorded at cost in accordance with the cost principle of accounting. Cost consists of all expenditure necessary to acquire the asset and make it ready for its intended use. For example, the purchase price, freight cost, insurance paid by the purchaser, and installation costs are all considered part of the newly purchased fixed asset. Cost is measured by the cash paid in a cash transaction or by the cash equivalent price paid when non-cash assets are used in payment. The

cash equivalent price is equal to the fair market value of the asset given up or the fair market value of the asset received, whichever is more clearly determinable. According to (William and Merry,2011) the acquisition cost of PPE is measured by cash. It should be measured by a Payment is made as per the terms of the purchase order.

The payment includes the acquisition cost, freight, and all other costs to put the asset. Once the materials are purchased it is received by proper receiving documents identified by tagged, and recorded within the PPE register actual cost, if the actual cost is not known it could be valued by estimated cost.

## **2.9 Commissioning of Fixed Asset**

Commissioning of new plant involves the builder or developer in starting up and operating the plant on a trial basis to check the functionality and satisfactory operation. A commissioning manager should be appointed, with technical support dependent on project size and complexity. The commissioning manager will develop a commissioning plan during the feasibility stage and will manage its implementation. The performance of the plant will be checked, and any operating or functional issues will be addressed. This might include such factors as failure to meet performance ratings, leaks, equipment failures, or premature wear. Issues of safety in operation and of safe access for operators, maintainers, and materials must be addressed. Operations and maintenance should be represented as key stakeholders in the commissioning stage. It is important to have logistic support arrangements in place before introduction into service; otherwise, users gallop off with the equipment and there is no support when problems arise (Nicholas A. J. Hastings,2015).

## **2.10 Maintenance of PPE**

Maintenance strategies include a variety of tasks and actions aimed at increasing reliability of assets and are derived from the reliability paradigms that the organization conforms to. However, key decision elements that govern maintenance regime are cost effective mix of planned and unplanned maintenance to minimize the total maintenance costs. Total costs of maintenance increase with the operational age of the assets. However, reactive maintenance costs decrease with the operational age of the assets, whereas the proactive maintenance costs increase with the age of the asset. Planned maintenance represents activities such as servicing, routine corrective

maintenance, planned preventive/predictive maintenance, and planned disposal, whereas unplanned maintenance represents emergency corrective maintenance, modifications, and redesigns arising from sudden wear out (IIMM 2006). (Moubray,1997) divides failure modes into two categories, i.e. hidden failures, where the asset operator doesn't become aware of the loss of asset functionality, under normal circumstances (for example, chemical additives in oil affecting its viscosity, which consequently affects the output of motor); and evident failures, where the asset operator becomes aware of the fault due to an evident break down.

The foundation of maintenance is the ability to identify possible failure modes. A failure mode, however, is the way an asset fails to perform its usual operation or function. Failure is reached in one of the three ways, as defined by (El-Haram,1995), i.e. when an asset become inoperable suddenly and can no longer perform its required operations; when an asset cannot fulfil some or all of its operations at the same performance standard as originally specified; or when an asset gradually deteriorates to an unsatisfactory level of performance or condition, and its continued operation is unsafe, uneconomical or aesthetically unacceptable. (Tsang,2002) argues that management's considerations about maintenance deal with four strategic dimensions, i.e.,

- a. service delivery options, which characterize the choices between in house and outsourced service.
- b. organization and structuring of maintenance functions.
- c. selection of maintenance methodology; and
- d. design of maintenance infrastructure and supports.

Maintenance approaches are aimed at fixing failures, and are classified into two categories, i.e. reactive maintenance, and proactive maintenance. However, there are three major approaches to maintenance (Kelly 1989&Davies, 1990) i.e. failure driven maintenance; time-based maintenance; and condition-based maintenance. Failure driven maintenance, also termed as corrective maintenance (Moubray, 1997) is a reactive approach that calls for running an asset to failure. In this approach, elementary maintenance consideration is given to maintain the health of an asset during its operation. Only basic servicing is carried out and the asset is operated till it reaches a failure condition (Tsang, 2002).

Time based maintenance is a proactive approach and is also termed as periodic preventive maintenance. It is carried out as a routine activity with the underlying belief that routine inspections and servicing options reduce the severity and frequency of failure occurrence (Percy & Kobbacy, 1996). Condition based maintenance (CBM), which is also known as predictive maintenance, aims at carrying out corrective maintenance when an asset or component has reached a pre-determined condition before failure or breakdown (Tsang, 1995). This maintenance strategy is in direct contrast to the periodic preventive maintenance, where an asset undergoes routine maintenance. Preventive maintenance is often criticized for wastage of effort and resources, and not accounting for the maintenance issues that develop between scheduled periods of maintenance.

### **2.11 Disposal of PPE**

An asset may be disposed of once it has reached the end of its useful life. In this case, these assets are considered, in many occasions, as surplus for the business. Most property or PPEs even though they have reached or exceeded their useful life, may still have a value to the business operations. Assets that no longer contribute to the organization's operations need to be disposed and considered surplus. Institutions should have a central warehouse of surplus Property, where all surplus assets can be store for further process (NSWG, 2001) states that the purposes of a disposal program are:

1. Elimination of costs related to the warehousing, insurance, and accounting systems necessary to fulfil the business' surplus property responsibility.
2. Maximize the proceeds by disposing of assets as soon as possible after they become excess to an institution's needs.
3. Establishment of priorities in the disposal process that encourages keeping assets in use if possible.
4. Conversion of unneeded assets into available funds on a timely basis for offsetting the cost of new assets.

### **2.12 Valuation of PPE**

PPE such as machinery, tools, equipment are tangible long-term asset that are not sold in the business rather used in the production of goods and service. PPE is recorded in the book value at

their cost price and then frequently updated to show their true and fair market value. the two methods in which can be done called revaluation and impairment.

Revaluation is a technique used to in accounting and finance where an asset recorded value (historical value) will be adjusted to the market value. An asset that loses its value and need to be written down is referred to as an impairment asset. The valuation of assets plays a central role in the accounting and operating decisions of the multinational companies. Although these techniques based on a similar theory, they may generate different results in the application. Under IAS 36, a PPE must be re-measured for possible impairment whenever events or changes in circumstances indicate that the carrying values may not be recoverable. An example of such events or changes in circumstances includes the following: Significance physical change in an asset, Significance decrease in the market value of an asset and Accumulation of costs significantly in excess of the amount originally expected to acquire (Bond, S., & Dent, P.,1998).

### **2.13 Asset management information system**

An asset management information system is a computer-based system which is designed to assist the user to create and maintain documentation for the asset management function. Asset management requires accurate, comprehensive, documented details of the identity, operating, and maintenance parameters of equipment. This information is utilized throughout the life cycle of the equipment by plant operating and maintenance personnel. Historical information aids in troubleshooting, root cause analysis, and the identification of safety performance and improvement opportunities by providing data for analysis and decision making. The records also provide evidence to regulatory bodies that maintenance tasks are being performed so that the technical integrity of the equipment is maintained (Nicholas A. J. Hastings,2015).

### **2.14 Characteristic of PPE**

PPEs are tangible assets used by a business to produce income. A PPE is a resource and a business reports in the assets section of its balance sheet, typically under the “property, plant and equipment” classification. Examples buildings; plant; equipment; transportation means; machinery; computers; anything that will probably bring future economic benefits. This type of asset has several characteristics that distinguish it from other assets. Knowing these characteristics can help you properly account for PPEs in your records.

### **2.14.1 Tangible**

A PPE is a tangible asset with a physical presence. This differs from intangible assets, such as patents, which are nonphysical. But the term “fixed” doesn’t necessarily mean that a PPE is attached to a company’s property. It simply means that it is a relatively permanent resource in the company.

### **2.14.2 Used in Operation**

A business owns its PPEs and uses them in its operations to generate revenue and profit. It does not buy them to hold for investment or to resell to customers. One company might classify a particular asset as a PPE in its records, while another company might consider the same asset as part of inventory or investments.

### **2.14.3 Long term life**

A business expects to use its PPEs and gain an economic benefit from them for more than a year, which makes a PPE a “long-term,” or “noncurrent,” asset. This differs from a current asset, such as inventory, which a business expects to hold for less than a year. For instance, if your small business buys machinery, you might expect to use it for 10 years before replacing it.

### **2.14.4 Capitalized Cost**

When a business purchases a fixed asset, it capitalizes its cost, which means it records the cost on the balance sheet instead of as an expense on the income statement. A business does this because it expects to use the PPE over multiple periods, whereas expenses are reserved for items used in a single period.

### **2.14.5 Depreciation**

If a PPE is anything other than land, a company transfers a portion of its capitalized cost on the balance sheet to an expense on the income statement each period through a process called depreciation. This process reduces a fixed asset’s value on the balance sheet to account for wear and tear.

## 2.15 Empirical Literature

Empirical literature refers to evidence from different sources of observation and report. There are several studies conducted in the field of PPE management. Due to PPE management problem, firms PPEs are idle and not utilized properly it affects the long-term sustainability of the firm, which may affect liquidity and solvency and profitability positions of the company. Different scholars studied regarding on PPE management in different business industries but as we understand the concept of PPE management is broad and complex from industry to industry.

The study has been conducted by Elinna Dubinina, (2008) and Susan S. Ekoh, (2015), both researchers mainly focus on oil and gas industry refinery and extraction processes how effect on community's economic development and impact on environmental damage problem on child respiratory system.

The study has been conducted by Hillesøy Kallevåg sept. (2015) aimed at providing useful insight towards how asset management practices and the application of novel technological solutions related to condition-based maintenance can provide improved utilization of assets involved in the oil and gas industry the case study of Norwegian Continental Shelf.

The study has been conducted by Praveen Irrinki (2012) on cement factory, the major objectives of the study were to analyze PPE efficiency. The study was used secondary data sources and tried to analyze by using ratio, tables and graphs. After evaluating financial statements, the researchers conclude that the overall PPE management of the company looks to be more than satisfactory.

The study has been conducted by Eyob Dadi, (2016) on assessment of PPE on DH Geda Blanket and Dyeing factory mainly focused of the problems related to PPE management and efficiency of utilization of asset in the company. The researcher has been used both quantitative and qualitative methods to collect the necessary data and descriptive statistics used for analysis. According to his finding, not well-designed system of PPE management, lack of following maintenance stages and poor keeping of maintenance recording. However, the study concluded that the company has problems need to improve. So, it is recommended to strength its PPE management system.

The study has been conducted by Getu Belete, (2018) on assessment of practices and challenges of public property management in Oromia Regional State in the case of Oromia Supreme Court. The study employed descriptive survey design and involves both quantitative and qualitative data

gathering tools The researcher has recommended fully enforce rules and regulations, should organize the staff with team and team coordinator, use professionals, and experienced work force, should apply asset management plan, standard storage, modern property handling and disposing methods, capacity building and establishing technology-based property at management system were recommended.

Based on the above empirical review and to the best knowledge of the study there is still the gap in PPE management practices in companies. To improve the business quality in all level strong PPE management system and physical control has big roll. This study focuses on an organization called Total Ethiopian share company PPE management practices. The paper is done by acquiring data from interviewing top managers and by distributing questionnaires to employees.

## **2.16 Summary and Literature Gap**

This chapter has observed mainly two broad topic theoretical and empirical literature written and studied by different scholars on PPE management and the need and the practical theory. Theoretical literature scope on PPE management activities extends from establishment of an asset management policy and identification of service level targets according to the expectation of stakeholder and regulatory/legal requirements, to the daily operation of assets aimed at meeting the desired levels of service. PPE management includes asset acquisition, commissioning, operation, maintenance, disposing and replacement. Information systems provide necessary support to enable PPE management processes; facilitate decisions support for the overall success of asset management. However, to ensure healthy asset management, it is extremely important to evaluate the performance of PPE management processes and infrastructure supporting and enabling these processes. These evaluations should enable a continuous improvement cycle in the organization so that these assessments provide actionable learnings, whereby underperforming areas are highlighted, and corrective action is taken.

Empirical literature of the study discussed on different scholars studied on PPE management. Oil and Gas industry sector has three broad category such as founding and extraction, refinery and blending and distributor of the petroleum and petroleum by products. There are different business companies in the world who works in this Oil and Gas industry business. Globally studies focused on founding & extraction and refinery & blending processes impact on the community economic



development and environmental pollution. In Ethiopia there are different studies on PPE management on public, share companies and limited companies but not found on petroleum and petroleum by products sector to the best knowledge of the study.

Finally, there are more than fifteen local and two international companies who work on distribution of petroleum and petroleum by products in Ethiopia. To join this industry, it required huge amount of capital to build the infrastructures (fixed asset) of the business and after all this much investment invested the price of each product regulated by the government. There is no possibility or room to set the price by the company itself and all products are imported from countries who have refinery & blending which is one challenge to get the foreign currency. If once companies are established with this challenge managing their PPE is key roll on their profit.

This is the literature gap on this sector due to the nature of the business this study conducted on Total Ethiopia S.C, from one of the international petroleum company.

## **Chapter Three**

### **Research Methodology**

#### **3.1 Introduction**

This chapter discusses the approaches and methodology of the study. This includes the research design, target population, data type and source, data collection methods and data analysis techniques, data validity and reliability and ethical consideration are discussed.

#### **3.2 Research Design**

The study was used a descriptive survey study research design which will be aimed at assessing the PPE management practice of Total Ethiopia S.C. A descriptive survey is usually concerned with describing a population with respect to important variables with the major emphasis being establishing the relationship between the variables. The advantage of this type of research design is that it is easy to understand as recommended (Kothari,2006). This design attempts to collect data from members of the population and describes existing phenomenon with reference to PPE management practices.

The study used judgment to classify the range of scores obtained on the five-point Likert scale as follows: a variable with a mean score of greater than 3.0 to 5.00 have taken as agree/ strongly agree on the five-point Likert scale, a score of 3.0 as neutral on the five point Likert scale and a score of less than 3.0 as strongly disagree/disagree on the Likert scale.

#### **3.3 Target Population**

A population in statistics is the specific parameter about which information is desired and it may include a set of people, services, elements and events, group of things or households, etc. that are being investigated (Kothari,2006). The target population are 62 staff of Total Ethiopia Head office, Aviation, and depots and more specifically user departments of asset and physical asset managed group that have much related in PPE management. The study used census population because all populations directly related to the study are included into the study.

### **3.4 Data Type and Source**

The study used primary data source. Primary data collected directly from the respondents through a self-administered close-ended using structured questionnaires and interview among the selected staff such as tertiary managers, equipment maintenance engineers, Business to business managers and accounts division managers.

### **3.5 Data Collection Method**

To gather the data, the researcher employed both open and closed questionnaires since it is more convenient and easier to collect the required information.

**Interview:** conducted the Total Ethiopia S.C. managers from Finance department, New Work Retail, Business to Business and operation are interviewed. Interview used to express qualitative opinion of the respondent.

**Questionnaires:** The questionnaires which comprise both close ended and open-ended is prepared in English that respondents easily understand the question and give appropriate answer.

### **3.6 Data analysis techniques**

The study was reviewing the appropriate statistical data analysis tools namely statistical package for social sciences (SPSS) computer software version 20.0. Descriptive statistics, including means and standard deviation frequency and percentage formulas are used. And before analyzing the data, raw data cleaned and edited for completeness and consistency. It then systematically organizes to confirm if it represents the target population and to facilitate objective interpretation of data at a later stage. Under the analysis topic both interview and questionnaires respond are analyzed concurrently.

### **3.7 Data validity and reliability of instruments**

The research instrument is going to test for both face and content validity. This was done by involving the subject experts and academic advisor. The participants were brief early in advance the researcher on the need and importance of the study and permission sought for their participation to have their full support. Guidance on how to answer the questionnaire was available from the researcher. This was ensured high completion rate and accuracy of the information provided.

The reliability of questionnaires was evaluated using Cronbach alpha and all the research question were considered for the calculation to measure the reliability of the questionnaire, the researcher applied a preliminary reliability test from 30 Asset management staff. According to the difference statistics the reliability coefficient exceeded 0.7 for any test or scale was an acceptable reliability coefficient. Therefore, as we can see the Cronbach alpha 0.849 indicates that the questionnaire administers in this study is reliable.

Table 3.1 Reliability Statistics

**Case Processing Summary**

		N	%
Cases	Valid	59	98.3
	Excluded <sup>a</sup>	1	1.7
	Total	60	100.0

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

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.844	.849	29

**3.8 Ethical considerations**

The permission for identifying data was required and obtained from Total Ethiopia S.C. Each questionnaire was administered together with a letter providing explanation and assurance that all information provided was treated confidential and their identity kept anonymous.

## **CHAPTER FOUR**

### **DATA PRESENTATION AND ANALYSIS**

#### **4.1. General overview**

In this chapter the data collected from various source related with PPE management practice of total Ethiopia S.C. has been discussed, the study focuses on data analysis and presentation in relation to a study assessment on PPE management practice of petroleum and petroleum by product distributor in Ethiopia companies in the case of Total Ethiopia S.C. The data presentation and analysis that has been collected from primary sources was analyzed using themes from research objectives. The study collected row data from employees, were categorized, edited, organized, and analyzed using both quantitative and qualitative methods. The quantitative data was converted into relevant information using analysis of ratios, frequencies, and percentage; and Presented in tables and figures mainly to support the qualitative descriptions.

#### **4.2. Respondent Rate**

The study has been collected relevant information about PPE management practice of the company from different department of Total Ethiopia share company (TSEC) namely, 6 managers from Business to business (B2B) department and new work department (NWD) 10 officers from each, 20 officers from finance department, 4 and 2 officers from equipment maintenance and Aviation depot respectively , 5 and 2 officers from health and safety quality environment (HSQE) and supply and distribution department (SD) respectively. As it has been clearly shown in the methodology part of the research, the total sample of the target population was sixty-two (62) and out of this, 59 questionnaires were returned which is 95.2% response rate.

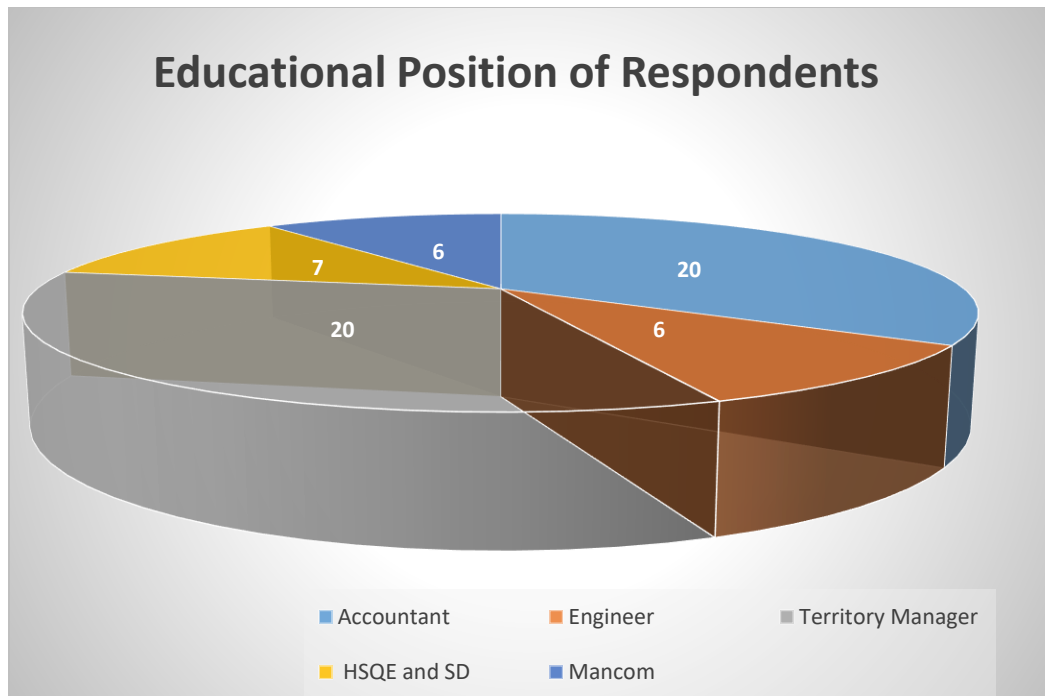


Figure 4.1 Educational Position of the respondent

Source: Filed Survey (2020)

### 4.3 Profile of the Respondents

The Profile of the respondents are presented below as follows in terms of Generally, characteristics such as education level, work experience and position.

#### 4.3.1 Educational background of Respondents

Related to their education background of the respondents, it is shown in the figure 4.2 below, the majority 44(75%) of them are first degree holders, while 2(3%) of them are diploma graduates. Moreover, respondents 13(22%), are master’s degree. Therefore, since the educational background relates to the profession and, we can assume that the information provided by the respondents was valid and reliable.

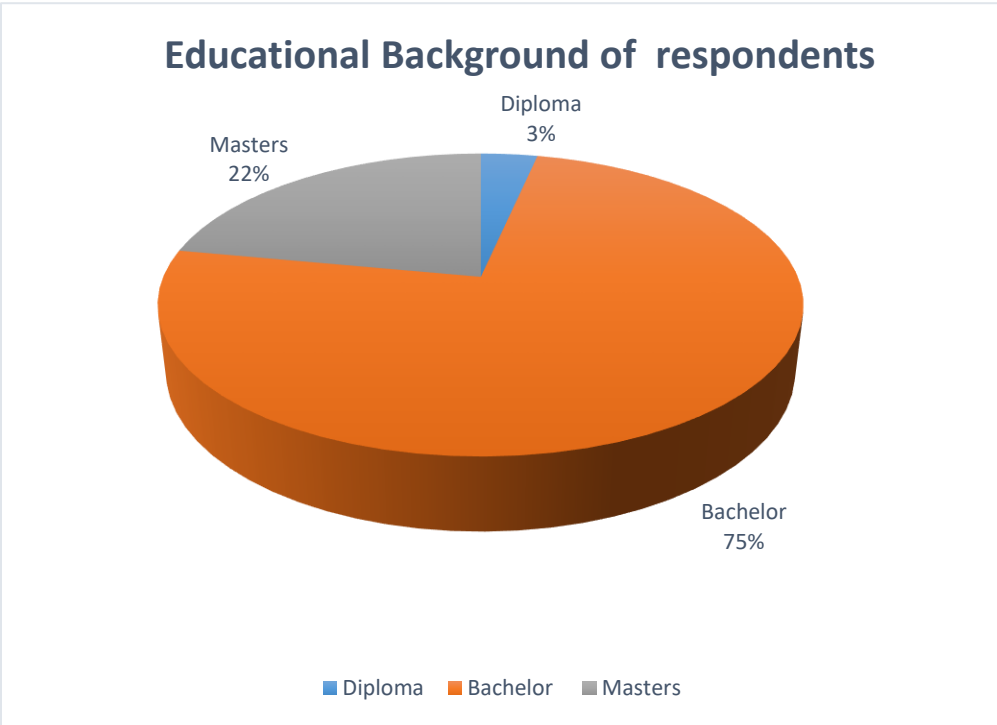


Figure 4.2: Educational background of the respondents

Source: Filed Survey (2020)

**4.3.2 Work Experience of the respondent**

Concerning the work experience of the respondent shows that, 18(31%) of them have work experience of less than 5 years, 11(19%) of the respondents have work experience of in between 6-10 years, whereas, 13(22%) of the respondents have work experience in between 11-15 years. Finally, the other 17 (29%) of the respondent has work experience above 16 years. Therefore, as clearly shown figure 4.2, most of the respondents are 51% have greater than 11 years of work experiences, which may have a positive impact in the total activity of the TESC because of the respondent have a lot of work experience and they know very well rather than less than 10 years' work experience relatively.

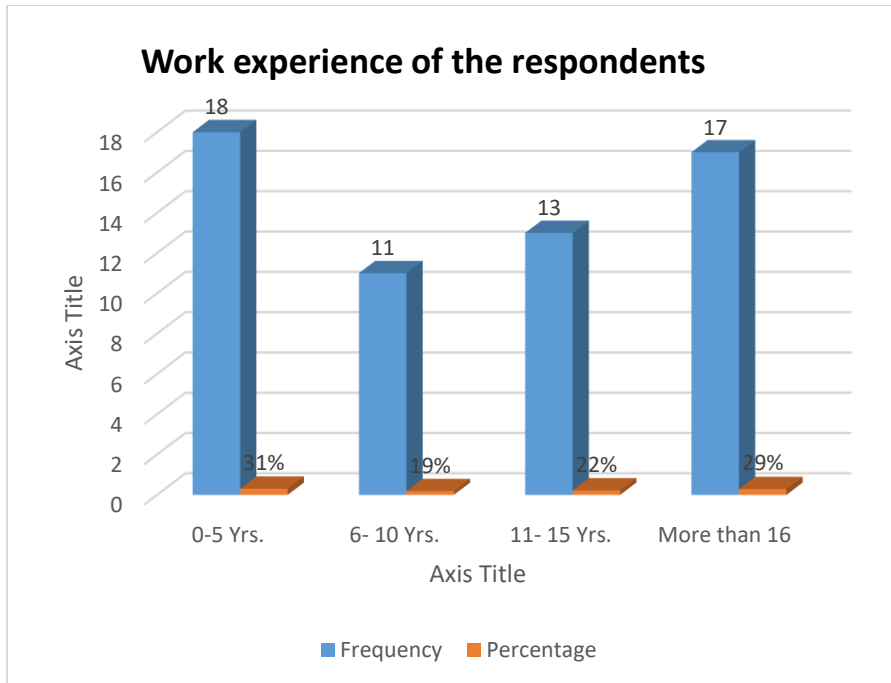


Figure 4.3 Work Experience of the respondents

Source: Filed Survey (2020)

#### 4.4 Study results from the collected data for PPE management practices

This section presents the results of the statistical analysis and interpretations of the data using mean and standard deviations. The self-administered questionnaire was prepared and presented using a five-point Likert scale where 1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. For the triangulation purpose a key informant interview was conducted some top managers.

The study used judgment to classify the range of scores obtained on the five point Likert scale as follows: - a variable with a mean score of greater than 3.0 have taken as agree/ strongly agree on the five point Likert scale, a mean score of 3.0 as neutral on the five point Likert scale and a mean score less than 3.0 as strongly disagree/disagree on the Likert scale.



#### **4.4.1 Assess the techniques and methods of PPE acquisition**

**Statement 1:** Risk analysis for new plant, equipment, and machinery prior to placing an order

Table 4.1 shows that on risk analysis for new plant, equipment, and machinery prior placing order majority of the respondent 29(49%) agreed and 26(44%) strongly agreed on the idea of the statement. On the other hand, 1(2%) disagree and 3(5%) are strongly disagree. Based on these responses and statically probability of mean and standard deviation 4.25 and 0.96 respectively explain that Total Ethiopia S.C. has strong practices of risk analysis on new property plant and equipment (PPE) before having the order. Most of the interviewed managers replayed on methods of the organization to acquire new PPE whether local or international purchase by followed the procedure of the company and by taking the advice of professionals about the specification and quality should be consider on the asset after take place the bid.

**Statement 2:** Integration of top Management with operation and maintenance department during the acquisition of new asset.

Management have taken an input form operation and maintenance department during the acquisition of new asset 29(49%) agreed & 21(36%) strongly agreed, most the respondent agree to the statement top managers are consulting operation and maintenance department's feedback before they acquire new asset on the other hand 2(3%) are neutral, 4(7%) disagree and 3(5%) are strongly disagree with the statement idea. But statically probability of mean and standard deviation 4.03 and 1.07 respectively strengthen the above idea that means there is a mechanism between top management with operational and maintenance department to take their opinion and participation before acquiring new property, plant and equipment (PPE).

**Statement 3:** Newly purchased equipment meets business requirement and list the documents generated to provide the control in store.

Purchase of equipment's in petroleum company concerned on identification, durability, capacity, specification and safety standards, this request massive capital investment. Accordingly, the study asked respondents to rate about, the relationship between business requirement and proper documentation with newly purchased equipment. Consequently, majority of the respondents 37(63%) agree and 16(27%) strongly agree about the process and analysis doing by the company to purchase new equipment based on the business requirement and on the other side some of the

respondents are 1(2%) neutral, 3(5%) disagree and 2(3%) strongly disagree with the statement. statically probability of mean and standard deviation 4.05 and 0.90 respectively this shows that the company has well organized in terms of preparing documents related to newly purchased equipment and proper documentation in the side of store to hold the new asset.

**Statement 4:** There is a procedure to describe the purchase process and documentation to buy the equipment.

In Petroleum company there is high risk if any equipment's purchased under the standard that has not been fit with the business. To protect this kind of issue the company has a policy and procedure for the purchase process on this opinion majority of the respondent ,22(37%) agree and 34(58%) strongly agree means that the company follow policy and procedure and fully full documents to buy new equipment and other respondent 2(3%) neutral and 1(2%) disagree about the statement. From the respondent mean and standard deviation 4.51 and 0.65 respectively can be conclude that the company has clear and understandable procedure by the employee and proper documentation has follow for the purchase of new property, plant, and equipment PPE.

**Statement 5:** The company involve purchasing of new PPE equipment frequently in a year.

The company has over 150 service station and 300 GT customers and four aviation depots plus difference Rapid Oil Change (ROC) site and office each activity need Saper part and new equipment when need to be change due to long time service or new investment or damaged. The respondent requested their attitude about this statement majority of the respondent 23(39%) agree and 27(46%) strongly agree on company's involvement to purchase new equipment's frequently in year. 3(5%) neutral and 4(7%) disagree and 2(3%) are strongly disagree on the involvement of the company. From the respondent mean and standard deviation 4.17 and 1.04 respectively shows the company involves frequently to purchase new PPE to run the business in a year.

**Statement 6:** The company apply the procedures and policy of purchasing when to acquiring new equipment.

The company's profitability depends on the creating and implementation of policy and procedure because policy and procedure is key for the movement of the company's each business activities where to be started and where to be finished to perform and computes in the market. Regarding to application of policy and procedure on the process of acquiring new asset form the respondent

23(39%) agree and 33(56%) strongly agree with the statement. The other respondent 1(2%) neutral and 2(3%) of the respondent disagree mean they company not apply the procedure and policy but the mean and Standard deviation 4.47 and 0.70 respectively of the statement shows that majority of the respondent agreed the company follow and apply policy and procedure to purchase new fixed asset.

**Statement 7:** Company has register newly purchase equipment properly and accurately in the asset register system.

PPE management practice of any sector recommended newly purchased asset should be registered in asset register has to be benefited from it if and only if the value and durability of the asset is fulfilling the definition fixed asset. Accordingly, form the respondent 30(51%) agree and 19(32%) strongly agree because most of the respondent are agreed newly purchased equipment should register immediately to get the benefited from the deprecation expense and service of the asset. Other respondent 5(8%) disagree and 2(3%) are strongly disagree generally form the respondent 11% are not agree on the statement and mentioned on an open-end question same of the investment are not recorded on time on the asset register due to incapability of partial investment closure on the system.

Generally, from the respondent mean and standard deviation 3.95 and 1.09 are it can be concluded that most of newly purchased asset for investment and other purpose register on the system when the capital budget completed and the asset commenced the operation.

**Statement 8:** Management decision to purchase new equipment is appropriate with the company's current situations.

Management has key role for directing and leading of the company forward to the future though their decisions. For the purchase of new equipment, the feasibility or usage of the equipment must be studied before sent to management decision of purchasing new equipment then management has ability to decides by comparing current situation of the company with the benefit of the equipment. Concerning the decision of new equipment 32(54%) agree and 20(34%) strongly agree with the idea on management decision considers current company situations. On the other hand, a 1(2%) neutral 5(8%) disagree and 1(2%) strongly disagree with the statement stated in the above. From the respondent Mean and Standard deviation 4.10 and 0.92 of the statement shows and can

concluded that majority of the respondent responds management has decided clearly by observing company's current situation.

Most of the interviewed managers explained about the process of the company budget approval once a year presented by departments by presenting their yearly budget and feasibility study (when necessary) aligned with the company business operations. This proposal will be approved by local managers and send to Head office to approve in group level. After held all this process the capital budgets will approve or not.

General, study has seen eight different statements to "assess the techniques and method of PPE acquisition" of the company listed under the below table 4.1 indicated that statistical probability of the objective mean value 4.19 and standard deviation of 0.94 the respondents reflect that the company has a good techniques and methods at a time of new PPE acquisition process.

**Table 4.1 Assess the techniques and methods of PPE acquisition**

<b>SN</b>	<b>Statement</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>	<b>M</b>	<b>Std. Dev</b>
<b>1</b>	Company has doing risk analysis for new plant, equipment and machinery prior to placing an order.	26 44%	29 49%	0 0%	1 2%	3 5%	4.25	0.96
<b>2</b>	Management have taken input form operation and maintenance department during the acquisition of new asset.	21 36%	29 49%	2 3%	4 7%	3 5%	4.03	1.07
<b>3</b>	Newly purchased equipment meets business requirement and list the documents generated to provide the control in store.	16 27%	37 63%	1 2%	3 5%	2 3%	4.05	0.90
<b>4</b>	There is a procedure to describe the purchase process and documentation to buy the equipment.	34 58%	22 37%	2 3%	1 2%	0 0%	4.51	0.65
<b>5</b>	The company involve purchasing of new PPE equipment frequently in a year.	27 46%	23 39%	3 5%	4 7%	2 3%	4.17	1.04
<b>6</b>	The company apply the procedures and policy of purchasing when acquiring new equipment.	33 56%	23 39%	1 2%	2 3%	0 0%	4.47	0.70
<b>7</b>	Company has register newly purchase equipment properly and accurately in the asset register system.	19 32%	30 51%	0 0%	8 14%	2 3%	3.95	1.09
<b>8</b>	Management decision to purchase new equipment is appropriate with the company's current situations.	20 34%	32 54%	1 2%	5 8%	1 2%	4.10	0.92
<b>Overall Mean</b>							<b>4.19</b>	
<b>Overall SDEV</b>								<b>0.94</b>

Source: Filed Survey (2020)

a five-point Likert scale where SD = strongly disagree, D = disagree, N = neutral, A = agree and SA = strongly agree

*Freq= Frequency, Std. Dev = Standard deviation, M= Mean*

*Source: own compilation*

According to Kimmel, et al., (1998) acquisition of new PPE practices and process of the company has much more related to the theory.

#### **4.4.2 identify the process of PPE maintenance**

**Statement 1:** The company has adequate safeguarded to protect the equipment form miss use and theft.

After having new or existed PPE should be kept manually or systematical as it is in existing place form human or natural incidents and disaster. Regarding this the respondent responds 33(56%) agree, 15(25%) strongly agree on company's controlling of PPE form theft and miss use. and 1(2%) neutral, 8(14%) disagree and 2(3%) are strongly disagree means that around 17% of the respondent disagree on the above statement. In general mean of the statement is 3.86 and standard deviation 1.06 show that the company has strong or adequate safeguarded mechanism for all the properties from miss use and theft.

**Statement 2:** The company has a policy and procedure to identify the maintenance requirement of the production plant and equipment.

Company has different property, plant equipment's for daily operation used to give a service such as Jet- A refueler truck, service station pumps, car lift and different kind of industrial equipment. All this are a need of maintenance, form this point of view the respondents of response 30(51%) agree and 19(32%) strongly agree on companies' policy and procedure ability to identify the process of maintenance requirements , 1(2%) neutral, 7(12%) disagree and 2(3%) strongly disagree form the above statement. The probability of the statement 3.97 mean and 1.07 standard deviation shows that the company has policy and procedure to identify the maintenance requirement of the production plant and equipment.

Interviewed managers response on the method of maintenance work responses there is call receiver in the company to receive and register any maintenance issue from the customers and transfer the list to the equipment maintenance engineer. Equipment maintenance engineer also transfer all call to the outsourced maintenance company to solve the problem happened on the costumer site and beside this they are follow the quality and duration to fix the problem.

**Statement 3:** The company has equipment maintenance database populated to contains material purchasing information and maintenance information.

Maintenance database has a key role to take place maintenance and to replace the asset by new if it is recorded all information related to maintenance this is one of the basic ways of saving and

controlling companies' wealth and information for decision. According to this statement the respondent replied 33(56%) agree, 10(17%) strongly agree the company has organized equipment maintenance database to use for information how much material should it be having. 2(3%) neutral, 14(24%) disagree this indicate by itself there is a loop on it or the maintenance database record not for all equipment's. But the statistical probability of statement mean and standard deviation 3.63 and 1.11 respectively show that the company has equipment maintenance database populated to facilitate material purchase and maintenance information to resolve the problem of the business operation.

**Statement 4:** The company has a control on the quality of maintenance work done on equipment is specified and confirmed as being achieved.

Most of the company's property physical administer by third party such as UGT, pumps, canopy, car lift and compressor, so the company has its own policy and procedure to safe and maintain the equipment work and also has database to control each maintenance information. Regarding this statement the respondent responds 31(53%) agree, 16(27%) are strongly agree on control on the quality of maintenance and suitability maintenance with the company safety and stander. Another respondent is 2(3%) neutral 9(15%) disagree and 1(2%) are strongly disagree with the stated statement. In other side statistical probability of the statement mean and the standard deviation 3.88 and 1.04 shows that the company has strong control on quality of maintenance work done.

Majority of interviewed managers believed that maintenance work of the company outsourced to different electromechanical companies. Their work supervised and verified by the company's equipment maintenance engineer their quality of work and material used for maintenance.

**Statement 5:** The company has level of analysis is conducted on plant and equipment problems by identifying start up and early life.

One of maintenance cycle is doing analysis before and after using plant and equipment on the site to save the cost and to get long term service form the equipment and plant. The respondent responds on this statement 29(49%) agree, 7(12%) strongly agree on the conducted analysis done by the company before and after the operation commencement. From the respondents 18(31%) disagree and 5(8%) strongly disagree this shows that some of the respondent are not agree on this

statement or they believed the company does not work analysis to identify the problems of the equipment. But the statistical probability of the statement the mean 3.25 and standard deviation 1.25 respectively, reflect that the company doing analysis on plant and equipment before happening the operational problem.

**Statement 6:** The company has provided training package to the service station or B2B customers to use PPE of the company properly.

Total Ethiopia S.C. worked with service station owners and dealers in addition to this worked with international organization, mega project owners and government offices. All this groups used company property by consignee and verified physical as per the policy by territory managers. To reduce the maintenance cost and to keeps the condition of the equipment's training is very essential for user and for the company. Majority of the respondent 30(51%) agree, 18(31%) strongly agree the company provide different training package for customer how to use and keep the equipment. 2(3%) neutral, 6(10%) disagree and 3(5%) strongly disagree with the statement stated on above. The statistical probability of the statement the mean and standard deviation 3.92 and 1.10 respectively explains that the company provided training package for the user of company property in different sector.

**Statement 7:** A proration of maintenance materials used annually are kept and provided direct from suppliers instead of keeping them in your own store.

Spare parts materials are very necessary like this kind of multinational and safety-oriented company to smooth the company's business functionality by having own store or directly providing from the suppliers. From this point of view the respondent attitude on this statement 23(39%) agree, 9(15%) strongly agree means that the company work by directly receiving materials form suppliers and held material for annual , 24(41%) disagree and 3(5%) are strongly disagree almost 46% of the respondent are not agree or they are not believed that company keeping a lot of materials in the store for more the a year. On statistical probability of this statement the mean 3.19 standard deviation 1.27 this indicate that most of the respondent agree the company has kept material in the store for a year the other use directly from the suppliers.

Generally, the study has seen seven different statements listed under table 4.2 that responds the objective of "identifying the process of PPE maintenance" the statistical probability of mean and



standard deviation is 3.67 and 1.16 respectively this indicate that the company follow well-structured PPE maintenance process.

**Table:4.2 To identify the process PPE maintenance.**

SN	Statement	SA	A	N	D	SD	M	Std. Dev
1	The company has adequate safeguarded to protect the equipment form miss use and theft.	15 25%	33 56%	1 2%	8 14%	2 3%	3.86	1.06
2	The company has a policy and procedure to identify the maintenance requirement of the production plant and equipment.	19 32%	30 51%	1 2%	7 12%	2 3%	3.97	1.07
3	The company has equipment maintenance database populated to contains material purchasing information and maintenance information.	10 17%	33 56%	2 3%	14 24%	0 0%	3.63	1.11
4	The company has a control on the quality of maintenance work done on equipment is specified and confirmed as being achieved.	16 27%	31 53%	2 3%	9 15%	1 2%	3.88	1.04
5	The company has level of analysis is conducted on plant and equipment problems by identifying start up and early life.	7 12%	29 49%	0 0%	18 31%	5 8%	3.25	1.25
6	The company has provided training package to the service station or B2B customers to use PPE of the company properly.	18 31%	30 51%	2 3%	6 10%	3 5%	3.92	1.10
7	A proration of maintenance materials used annually are kept and provided direct from suppliers instead of keeping them in your own store.	9 15%	23 39%	0 0%	24 41%	3 5%	3.19	1.27
<b>Overall Mean</b>							<b>3.67</b>	
<b>Overall SDEV</b>								<b>1.16</b>

Source: Filed Survey (2020)

a five-point Likert scale where SD = strongly disagree, D = disagree, N = neutral, A = agree and SA = strongly agree

*Freq= Frequency, Std. Dev = Standard deviation, M= Mean*

*Source: own compilation*

According to Tsang (2002) managers should consider four strategical dimensions about maintenance of fixed asset. The finding of this study is considered and follow to do companies PPE maintenances.

#### **4.4.3 To assess the system of PPE registration and disposal from the system**

**Statement 1:** The company has a procedure on disposal of assets at the same time from asset register and physically from the store.

When disposal of PPE takes place, the asset should remove simultaneously from the place where stored physically for disposal and from asset register on the system. Otherwise there will be variation between physically counted and on the system registered at the time of PPE verification. Regarding to this statement the respondent replied 29(49%) agree, 26(44%) strongly agree explain there is a document exchange between the disposal committee and asset register admin to remove from the system. On the other hand, 4(7%) disagree from the statement stated above and statistical probability of the mean and the standard deviation of the statement is 4.31 and 0.79 respectively show that the company has implement a procedure to dispose physically and from system on the sometime.

Most of interviewed managers agreed on the company process of disposal of old asset has been benefited in terms of money by selling and corporate social responsibility (CSR) through donation.

**Statement 2:** Company apply policy and procedure on the spares holding for equipment removed form service and outdated from the technology.

Company has martial store house who used for spare parts to maintenance purpose of the equipment and plants due to the structure change or happening of technology change so most of spare parts are outdated. Holding of outdated inventory has it is own cost and storage problems on the company. According to this the respondent gives their opinion 13(22%) agree, 11(19%) strongly agree, means that the company has spare parts hold in the store not used for current company business and not applied the procedure to remove from the store 1(2%) are neutral, 32(54%) disagree, 2(3%) strongly disagree from this respond 57% of the respondent are not believed that company are applying procedure to removed outdated spare parts from the store. The statistical probability of the statement mean value and standard deviation is 2.98 and 1.29 respectively shows that company has policy and procedure for removing outdated spare parts from the sore but not implement the policy and procedure.

**Statement 3:** The company are responsible on the risk reviews process used when decommissioning plant and removing it from service.

In petroleum industry the environmental pollution of product is very high or easily exposed to hazardous activity each product is related to or the output of the Petroleum. So, the plant service life more than forty of fifty years like depots and service stations. Finally, at a time of decommissioning plant it should be take high caution and study to stop the operation without any environmental damage. According to this the respondent answer on this statement as follows 32(54%) agree, 24(41%) strongly agree, this means that company has high responsible for environmental pollution protection. 2(3%) disagree and 1(2%) strongly disagree on the statement sated on the above. The statistical probability mean value and standard deviation of the statement is 4.29 and 0.79 respectively shows that the company has responsible to do risk reviews process at a time of decommissioning plant from operation to protect environmental damaged.

**Statement 4:** The company has list of standards laws and regulation that apply to on the operation with regards scrapping, storing, and selling retired fixed asset.

The company has different equipment's to render the operation for the customers such as double wall tank (DET), underground tank (UGT), service station pumps like diesel, regular and used oil pump & collector and others has given service for definite time of service life. When equipment's has finished it is useful life or damaged should be collected in the store and the damaged asset replaced by new to run the business. This scrap and retired PPE should be collected properly to sold by auction. The respondent of this statement replayed 27(46%) agree, 29(49%) strongly agree, this means that the company has standard and regulation to store and sold the collected items. 2(3%) disagree and 1(2%) strongly disagree on the statement sated on the above. The statistical probability of the statement mean value and standard deviation of the statement is 3.46 and 1.53 respectively shows that there is standards, laws, and regulation for the operation on collecting and selling of scrap and retired fixed asset.

**Statement 5:** The company has a trend to work by committee for removing of retired asset physically when sold or donated for third party.

Scrap and retired PPE placed under company store should be sold by auction or it may be donated, this should be done by committee starting from initial to end. The respondent response is as follows

30(51%) agree,15(25%) strongly agree this mean after the scrap and retired asset collected from the site into the company store using proper documentation removed from the store by committee. On the other hand, 13(22%) disagree and 1(2%) are strongly disagree the statements stated on above. The statistical probability of the statement mean value and standard deviation of the statement is 3.76 and 1.12 this shows that the company has a trend to work by committee to remove scrap and damaged PPE from the store whether it sold or donated.

**Statement 6:** The firm do preparation, planning and risk analysis conducted before plant and equipment is removed from customer site for disposal.

One of the main goals of petroleum company working the business without affecting the environment though air pollution and contamination. So, the company should have preparation and planning to do risk analysis before removing plants from customer site. Regarding this the respondent answer 28(47%) agree 27(46%) strongly agree means that the company have planning and preparation of doing risk analysis ,1(2%) disagree, 3(5%) strongly disagree idea expressed on the statement above. The statistical probability of the statement mean value 4.25 and the standard deviation 1.01 indicates that the company has strong emphasis to prepare planning and also on the others side Total Ethiopia S.C has good experience on it by assigned one department which is called Health Safe Environment and Quality (HSEQ) to handle this kind of issue related to the environment.

Generally, the study had seen six statements on the above and listed under table 4.3 to explain clearly the objective idea i.e. “ to assess the system of PPE registration and disposal from the system” the statistical probability mean value and standard deviation 3.86 and 1.20 respectively, this indicate that the company has strong experience on PPE registration at a time of acquisition and disposed of scrap and damaged physically and from the system.

**Table 4.3 To assess the system of PPE registration and disposal from the system**

SN	Statement	SA	A	N	D	SD	M	Std. Dev
1	The company has a procedure on disposal of assets at the same time from asset register and physically from the store.	26 44 %	29 49 %	0 0%	4 7%	0 0%	4.31	0.79
2	Company apply policy and procedure on the spares holding for equipment removed form service and outdated from the technology.	11 19 %	13 22 %	1 2%	32 54 %	2 3%	2.29	1.29
3	The company are responsible on the risk reviews process used when decommissioning plant and removing it from service.	24 41 %	32 54 %	0 0%	2 3%	1 2%	4.29	0.79
4	The company has list of standards laws and regulation that apply to on the operation with regards scrapping, storing, and selling retired fixed asset.	29 49 %	27 46 %	0 0%	2 3%	1 2%	3.46	1.53
5	The company has a trend to work by committee for removing of retired asset physically when sold or donated for third party.	15 25 %	30 51 %	0 0%	13 22 %	1 2%	3.76	1.12
6	The firm do preparation, planning and risk analysis conducted before plant and equipment is removed from customer site for disposal.	27 46 %	28 47 %	0 0%	1 2%	3 5%	4.25	1.01
<b>Overall Mean</b>							<b>3.86</b>	
<b>Overall SDEV</b>								<b>1.20</b>

Source: Filed Survey (2020)

a five-point Likert scale where SD = strongly disagree, D = disagree, N = neutral, A = agree and SA = strongly agree

*Freq= Frequency, Std. Dev = Standard deviation, M= Mean Source: own compilation*

Ideas generalized on this objective much more related that discussed under the literature (NSWG 2001) all assets that no longer contribute to the organization's operations need to be disposed and considered surplus and should be avoid as per the procedure of the company.

#### 4.4.4 To assess the company doing physical PPE verification

**Statement 1:** The company has period for PPE verification suitable to the business operation

Companies has their own time for PPE physical verification suitable to their business operation.

According to this the respondent replays 31(53%) agree, 15(25%) strongly agree this means that

the company has suitable verification time for its business operation. On the other hand, 13 (22%) disagree with the statement stated on the above and statistical probability mean of the statement mean value 3.81 and standard deviation 1.06 this shows that the company has suitable time for business operation to take place PPE verification of the company. Majority of the interviewed managers respond on the period of PPE verification is suitable to the business operation and benefited from it by minimizing verification cost according to the PPE the company distributed overall the country.

**Statement 2:** All PPEs of the company are reconciled with asset register and physically counted in site.

PPE verification means reconciliation of PPE physical held by the company and register on the system asset register as per the company appropriate time to do. Majority of the respondent responses 20(34% agree, 16(27%) strongly agree means that the company have list of asset reconciled physical with the system, 21(36%) disagree 2(3%) strongly disagree but from the respondent 30% are disagree on this statement means they are not believed that the company has reconciled list of PPEs physically with the system. The statistical probability of the statement mean value 3.46 and standard deviation 1.32 show that there is reconciled list of PPEs physically with the asset register in the company.

**Statement 3:** The time of physical count or verification period consider the duration of B2B customer project life span

Lifetime of the projects is different form company to company as per the duration of the work to be accomplished. This means that there is a variation between company physical asset verification and project life span. The company should have agreed asset verification time with the project according to this the respondent feedback is as follow 8(14%) agree, 4(7%) strongly agree mean that the company have suitable period with the project life time. On the other hand, 38(64%) disagree and 9(15%) are strongly disagree this shows us 79% of the respondent believed that the company has no physical count or verification period to consider the project life time of organization who are working with the company. The statistical probability of the statement mean value 2.32 and standard deviation is 1.11 so, this indicate that company's PPE verification time is not considered projects lifetime of the organization who are working with Total Ethiopian share company.

**Statement4:** Company has strong procedure to control or minimize variation of PPE between the system and physically found.

Variation of PPE happened due to different reason such as asset damage removed from the site or theft but not extracted from the asset register list. So, verification has key role on the company’s wealth to keep and control the asset and this should be supported by procedure and policy. Regarding this the respondent respond is as follows 24(41%) agree,23(39%) strongly agree, this means that the company has strong procedure to control the variation 9 (15%) disagree,2(5%) strongly disagree means that the respondent do not believed the company have strong procedure to control or minimize the variation. The statistical probability of the statement mean value 3.80 and standard deviation 1.41 this shows that the company has strong procedures to control minimize variation between physically counted and resister on the asset register list in the system.

Generally, the study had seen four statements on the above and listed under table 4.4 to clearly explain the objective idea i.e. “To assess the company doing physical PPE verification” the statistical probability mean value and standard deviation 3.35 and 1.37 respectively, this indicate that the company has working physical PPE verification or counting.

**Table 4.4 To assess the company doing physical PPE verification**

SN	Statement	SA	A	N	D	SD	M	Std. Dev
1	The company has period for PPE verification suitable to the business.	15 25%	31 53%	0 0%	13 22%	0 0%	3.81	1.06
2	All PPEs of the company are reconciled with asset register and physically counted in site.	16 27%	20 34%	0 0%	21 36%	2 3%	3.46	1.32
3	The time of physical count or verification period consider the duration of B2B customer project life span.	4 7%	8 14%	0 0%	38 64%	9 15%	2.32	1.11
4	Company has strong procedure to control or minimize variation of PPE between the system and physically found.	23 39%	24 41%	0 0%	9 15%	2 5%	3.80	1.41
<b>Overall Mean</b>							<b>3.35</b>	
<b>Overall SDEV</b>								<b>1.37</b>

*Source: Filed Survey (2020)*

a five-point Likert scale where SD = strongly disagree, D = disagree, N = neutral, A = agree and SA = strongly agree

*Freq= Frequency, Std. Dev = Standard deviation, M= Mean*

*Source: own compilation*

According to the literature reviewed PPE physically verification includes all over process of the asset much more related to the asset cycle such as acquisition, commissioning, operation and disposal. The company more performed and practices physical asset verification as per the literature reviewed.

#### **4.4.5 identify the planning of PPE valuation and system control**

**Statement 1:** The company software provides input validation or checking when wrong entry provides by system administrator.

The software of asset register should have input validation when feed wrong data and PPE system administrator should be trained how to operate the system when new asset listed in to the system and extracted from the system otherwise it affects over all companies' PPE management system as well as the financial statements also. The respondent's opinion is 26(44%) agree, 23(39%) strongly agree means that the software of the company has shown signal when the administrator makes error ,4(7%) neutral they did not agree or disagree on the statment,5(8%) disagree, and 1(2%) are strongly disagree this show the respondent not believed by the statement stated on the above. The statistical probability of the statement mean value and the standard deviation is 4.10 and .98 respectively this indicate that company software provides input validation and checking point before to take action.

**Statement 2:** The company has plan and period for PPE valuation.

Some PPE values are appreciated though dynamic change of the economy from time to time. So, it expected form the company to reevaluate the asset and forced by international financial reporting standards (IFRS) to do valuation of fixed asset. Majority of the respondent responds their attitude on this statement 15(25%) agree,10(17%) strongly agree means that the company plan and period to do PPE valuation 31(53%) disagree 3(5%) strongly disagree from this 58% of the respondent they believed that the company does not have plan or period to do PPE valuation. The statistical probability of the statement shows that mean 2.97 and standard deviation 1.30 this explain that the company has not plan and period to reevaluate the PPE of the company.

**Statement 3:** The company has control on the depreciation work done by the system and expected from it.



System may be manipulated due to knowledge gap or lack of adequate training of the system operator or anomaly happened so depreciation calculated by the system should be checked by PPE management accountant or others. According to this the respondent answer the statement as follows 28(47%) agree,18(31%) strongly agree means that the company has checklist for reconciliation between the system and manually depreciation. On the other hand, 13(22%) disagree and the statistical probability of the statement mean 3.86 and standard deviation 1.09 this shows that deprecation worked by system and expected from the system checked by the company system administrator.

**Statement 4:** System administrator and physically asset management departments are in line with PPE control.

Under the company system administrator department and PPE physically used and controlled departments are different, this two groups should be on some page. Majority of the respondent replayed 21(36%) agree, 7(12%) strongly agree this means that company's PPE controlling group are in line with each other. on the other hand, 29(49%) disagree, 2(3%) strongly disagree from this respond 52% of the respondent are not believed that system administrator and physical asset managed group are not on the same page each other. The statistical probability the statement mean 3.03 and standard deviation 1.22 shows that the system administrator and physical asset management departments are in line with each other. Majority of the managers replayed on their interviews the company has strong action on keeping PPE owned by the company and follow up PPE held by third party for the business use.

Generally, the study had seen four statements on the above and listed under table 4.5 to clearly explain the objective idea i.e. "To identify the planning of PPE valuation and system control" the statistical probability mean value and standard deviation 3.57 and 1.22 respectively, this indicate that the company has clear planning of PPE valuation and system control.

**Table 4.5 To identify the planning of PPE valuation and system control**

SN	Statement	SA	A	N	D	SD	M	Std. Dev
1	The company software provides input validation or checking when wrong entry provides by system administrator.	23 39%	26 44%	4 7%	5 8%	1 2%	4.10	0.98
2	The company has plan and period for PPE valuation.	10 17%	24 41%	0 0%	22 37%	3 5%	3.27	1.27
3	The company has control on the depreciation work done by the system and expected from it.	18 31%	28 47%	0 0%	13 22%	0 0%	3.86	1.09
4	System administrator and physically asset management departments are in line with PPE control.	7 12%	21 36%	0 0%	29 49%	2 3%	3.03	1.22
<b>Overall Mean</b>							<b>3.57</b>	
<b>Overall SDEV</b>								<b>1.22</b>

*Source: Filed Survey (2020)*

a five-point Likert scale where SD = strongly disagree, D = disagree, N = neutral, A = agree and SA = strongly agree

*Freq= Frequency, Std. Dev = Standard deviation, M= Mean*

*Source: own compilation*

According to IAS 36 companies need to reevaluate their PPE per year and the company also has reevaluate. And according to Nicholas A. J. Hastings (2015) information system management practices are related to the company practice.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

#### **5.1 Introduction**

This chapter provides the summary, conclusion and recommendations based on the stated in the objectives and research questions. The study focused on assessment of PPE management practice on petroleum and petroleum by product companies in Ethiopia for the case of Total Ethiopia S.C.(TSEC). For this reason, it reviewed relevant literatures and documents and collected data from the targeted population. Therefore, during the analysis the findings were identified basically, the study focuses assessment on PPE management practice and identifies the challenges that affect the process of new asset acquisition, maintenance, disposed of damaged and outdated asset, valuation of asset and physically count based on the evidence from Total Ethiopia S.C.(TESC). To achieve the objectives of the study, the study employed primary data.

#### **5.2 Summary**

The commencement of implementation of different structure change, accountability system, and creating policy and procedure for PPE management is to achieve transparent, economical, accountability and effective utilization of PPE management in the company PPE management process in company is geared more toward monitoring economic performance and customer responsiveness than system performance the company, although safety is one of the primary concerns in the process. company's frequent and regular testing optimizes on the condition of PPE it increase the economic performance of physical assets.

PPE is defined as a tangible item of property, plant and equipment (PPE) held by the company for use in the productions or supply of goods or services, for consignee to others, or for administrative purposes, and which is expected to be used during more than one reporting period (financial year). Property is an asset which can serve the company lifetime or long period of such as land and building. Plant is a kind of PPE which can help the company to do the main part of the business-like depot pipeline huge capacity of product storing and combined different machines together to give the service. Equipment is an asset their lifetime is not more than five years they are used to takes place the function of property and plant such as cars office computers the like.

The general objective of the study is to describe the assessment of PPE management practice of Total Ethiopia S.C. In this research, there were six parts of PPE management practices on the PPE: namely, new asset acquisition, maintenance of asset, disposal of asset, valuation of asset, physical verification and controlling on asset register on the system.

PPEs management plays very important role to achieve company's objectives. These PPEs are not convertible or liquid able over a period the total owner funds and long-term liabilities are invested in fixed assets. Since PPEs playing dominant role in entire business the firms have realized the effective utilization of fixed assets. So, it is very much important to understand the analyzing and properly utilized of PPEs effects long term sustainability of the firms which may affect liquidity and solvency and profitability positions of the company. Because it needs huge amount of investment to establish petroleum company in terms places, plants, and safety standards to run the business. The asset having with this huge investment should be operated and managed properly otherwise, idle PPEs lead a tremendous in financial cost and intangible coat associate to it. So, there is need for the companies to evaluate PPEs performance analysis time to time by comparing with previous performance, Comparison with similar company and comparison with industry standards.

The study used a descriptive research method. Descriptive research is usually concerned with describing a population with respect to important variables with the major emphasis being establishing the relationship between the variables. The advantage of this type of research design is that it is easy to understand. This design attempts to collect data from members of the population and describes existing phenomenon with reference to PPE management practices. Sampling design for this study was population census because our number of populations are sixty-two.

The study had a total target population 62 staffs among this total population 50 was from Head office and the remaining are from aviation and depots. A total of 62 questionnaire were distributed 59 questionnaires were returned which is 95.1% from the total distributed questionnaires. 3 questionnaires are not returned and there is no incomplete and rejected questionnaire at all. The respondent was specifically, user departments of asset and physical managed group that have much related with assets. SPSS was applied in the study to process quantitative data obtained from the structured questionnaire. The study was used appropriate statistical data analysis tools namely

descriptive statistics, including means and standard deviation which was helping to meet the objective of the study.

The study findings will be hoped to contribute to Total Ethiopia S.C. management group to see the practices PPE management of the company and to take corrective measurements in terms of organizational structure, procedural and policy amendment to close the gap. And it also helps the employee who have direct relationship with PPE management and follow up can assess their attitude and practice in terms of the property management science and practice. On the other hand, Total Ethiopia share company as an international company has a lot of experience to share for local companies who work on petroleum product distribution this study will help for another researcher.

### **5.3 Conclusion**

The general objective of the study was describing assessment of PPE practice on petroleum and petroleum by products distributor companies in Ethiopia in the case of Total Ethiopia S.C. From the qualitative data collected by using self-administer questionnaire which has been done by the study, it is reached to the following conclusions about PPE management practice:

- ❖ Purchasing or acquisition of new PPE company has a policy and procedure, but it looks sometimes they did not implement additional analysis due to this they are purchased asset which is not suitable for the company business.
- ❖ Physical PPE verification held every five years this has it is own problems once the period is long with in ten year it is done only once and the duration is not fit with the project staying two or three years before doing physical count the project completed and the contractor leave the country.
- ❖ Due to high turnover of the employees assigned to PPE system administrate accountant and unsmooth handover there was huge amount of money understated the expense in year 2017 as per the system audit comment due to depreciation lifetime code missing.
- ❖ Disposal of damaged or outdated asset are not takes place in line to system administer or the date not taken from asset register accountant due to this sold or donated asset not completely removed from the register.
- ❖ There is a gap on full implantation of PPE standard IAS 16 specifically on the equipment's ready for use and stored in warehouse are not started depreciation.

- ❖ Asset recorded on the asset register and physically existed are not tally each other due to the communication between the asset register accountant on the system and physical managed departments they are dispose divest the service station or when they are moved asset from one customer sit to another customer site.
- ❖ The company does not work asset revaluation since established this show that the value of most of the company asset does not reflect the exact value of asset.
- ❖ As shown in this research analysis no care and appropriate handling is given to disposed properties before it is damaged or lost its economic value. According to the study handling of disposed property, disposal process and disposal action had several limitations with the intention of identifying and separation of scrap, surplus and obsolete materials from properties.

#### **5.4 Recommendation**

Based on the findings of the study as summarized above, the study forwards the following recommendations for the management of Total Ethiopia S.C.

- ❖ Efficient and accurate PPE management practice is required the setting of clear and transparent procedure and policy that contain over all the situation the company and in line with the government rules and regulation to achieve the company's objective and goal. It should be shared to all to understand who will do, when, and how will do.
- ❖ To enforce the policy and procedure of PPE management efficiently and effectively under rules and regulations the key points and high concern on training, experience, and availability of documents at all levels. These should be made available by soft and hard copy to strengthen staff awareness of policy and procedure and ensure efficient and effective administration.
- ❖ The company should have maintenance and disposal program. This helps to the company to minimize maintenance cost, has information about each asset recorded maintenance history for any decision and can earn by sold damaged or outdated asset.
- ❖ The companies should regularly follow up and review the activities related PPE to ensure adherence to PPE process, implementation of policies and procedure. It will protect the

company from miss use, fraud, and errors, or to secure completeness and accuracy of the records for the preparation reliable financial information.

- ❖ The company should prepare property plant and equipment management plan involving all concerned departments prior to the beginning of budget year and should report their implement according to planned activities quarterly to ensure resourceful asset management.
- ❖ If the company has a procedure or trend disposed items sold to employees there is consideration from employee side to use the advantages and avoid employee disappointment and negative images of the asset management.
- ❖ The other recommended issue regarding property plant and equipment administration departments and disposal committee role in disposing surpluses, scrap and obsolete properties were early identifying, safely hold and timely dispose before damaged and storage cost.
- ❖ In further research area, the study suggests that interested researchers can add more companies invested on petroleum company. The companies in Ethiopia in this industry have different structure most of them are owned by local investors and the other two are international companies. It is more comfortable to generalize by observing the companies PPE management practice through comparison by including all stakeholder who participate in the industry.

## Reference

- Agnes Cheng, C. S., & Lin, S. W. j. (2009). When do firms revalue their assets upwards? Evidence from the UK. *International Journal of Accounting & Information Management*, 17(2), 166–188.
- Bond, S., & Dent, P. (1998). Efficient management of public sector assets. *Journal of Property Valuation and Investment*, 16(4), 369-385.
- Campbell,J.D and Jardin,A.K.& McGlynn,J.(2011) Asset management excellnce.Boca Raton:Taylor & Firancis Group.
- Davies, A 1990, Management guide to condition monitoring in manufacturing, The Institution of Production Engineers, Holbrook & Son, London
- El-Haram, M (1995), ‘Integration approach to condition-based reliability assessment and maintenance planning’, Ph D. Thesis, University of Exeter, Exeter, UK
- Haider, A. (2013). *Information Systems for Engineering and Infrastructure Asset Management*, | Springer Fachmedien Wiesbaden 2013
- IIMM 2006, ‘International Infrastructure Management Manual’, Association of Local Government Engineering NZ Inc, National Asset Management Steering Group, New Zealand, Thames, ISBN 0-473-10685-X
- Kelly, A (1989), *Maintenance and its Management*, Ashford Press Ltd, Southampton, Hampshire.
- Kimme, Paul D. l, Jerry J.Weygandt.(1998) *Tolls for Business making*. New York:Donald E. Kieso Wiley
- Kothari, C. (2006). *Research Methodology; Methods and Techniques (2nded)*. New Delhi India: K.K.Gupta for New Age International (P) Ltd
- Lepani Wagatakierwa,(2008) *PPE Management Manual*, 2008 NevmanPrakashan,Delhi
- Liapis, K. J., & Christodouloupoulou, E. P. (2011). How GAAP and accounting treatments influence property management. *Journal of Property Investment and Finance*, 29(3), 251–279.
- Lu, Y. (2011). Public Asset Management: Empirical Evidence from the State Governments in the United States. *Florida Atlantic University*, 53(9), 1689–1699.



Moubray, J (1997), Reliability-centered maintenance, 2nd edition, Industrial Press Inc., NY.

Nagaraju. (2018) ISSN NO.2394-8442 A study of PPE Management.5(2),876-887

Nicholas A. J. Hastings (2015), Physical Asset Management, Springer-Verlag London Limited 2015

Niven, C. (2015). *Asset Management in the Oil and Gas Industry*.

NSWG (2001), 'Asset disposal: strategic planning', New South Wales Government Asset Management Committee, DPWS Rpt No. 01048, ISBN 0734741405, Sydney, NSW

Nursalam, (2016) in Journal of chemical information and Modeling (V01.53.Issue 9)

PAS 55-1 and PAS 55-2 Asset Management, British Standards Institution,

Percy, DF, & Kobbacy, KAH (1996), 'Preventive maintenance modelling - A Bayesian perspective', Journal of Quality in Maintenance Engineering, 2(1), pp. 15-24

Sethi, A, & Sethi, S (1990), 'Flexibility in manufacturing: a survey', The International Journal of Flexible Manufacturing Systems, Vol. 2, pp.289-328

Siregar, Doli D. (2004). Management Asset. PT. Gramedia Pustaka Utama, Jakarta

Tsang, AHC (2002), 'Strategic dimensions of maintenance management', Journal of Quality in Maintenance Engineering, Vol. 8, No. 1, pp. 7-39.

William D. Brady. (2001). Managing PPEs in the Public Sector: Managing for Service Excellence. Universal Publishers, Florida, United States.

William and Merry, (2011) PPE procedure manual, Vegina Institute of Marine,USA

## **Appendix I questionnaire**

**St. Mary's University**  
**School of Graduate Studies**  
**Department of Accounting and Finance**  
**(Student: MBA in Accounting and Finance)**  
*Questionnaire*

**Dear Sir/Madam**

The aim of this questionnaire is to seek information about the assessment of PPE management practices of Total Ethiopia S.C.(TESC). The information you provided in response in the questionnaire will be used as part of the thesis paper which I requested to complete as partial fulfillment of MBA in Accounting and Finance.

As stated above, the data is needed for the study on assessment of PPE management practices of Total Ethiopia S.C.

We would like to assure you the information you provide will be manageable only for academic purpose. Your cooperation to respond genuinely is very useful to this study because it represents sample in a population. Please answer all the question and space is provided at the end of the questionnaire for you to add additional information and comment.

Thank you in advance for your cooperation for your invaluable time to complete this questionnaire.

**Best regard's**

## Section A – General Question

A.1. Your level of Education?

Diploma  Bachelor  Masters  PHD

A.2 what is your Occupation in Total Ethiopia S.C.?

Officer  Accountant  Engineer

Supervisor  Territory Manager  Division Manager

Mancom

A.3 How long have you been working in Total Ethiopia?

0-5 Yrs.  6- 10 Yrs.  11- 15 Yrs.  More than 16 Yrs.

## Section B. Assessment of questions

### *B.1 Assess the techniques and methods of PPE acquisition*

S N	Statement	<i>Strongly Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
		5	4	3	2	1
1	Company has doing risk analysis for new plant, equipment, and machinery prior to placing an order.					
2	Management have taken input form operation and maintenance department during the acquisition of new asset.					
3	Newly purchased equipment meets business requirement and list the documents generated to provide the control in store.					
4	There is a procedure to describe the purchase process and documentation to buy the equipment.					
5	The company involve purchasing of new PPE equipment frequently in a year.					
6	The company apply the procedures and policy of purchasing when acquiring new equipment.					
7	Company has register newly purchase equipment properly and accurately in the asset register system.					
8	Management decision to purchase new equipment is appropriate with the company's current situations.					

If any \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

***B.2 To identify the process PPE maintenance.***

SN	Statement	<i>Strongly Agree</i> <b>5</b>	<i>Agree</i> <b>4</b>	<i>Neutral</i> <b>3</b>	<i>Disagree</i> <b>2</b>	<i>Strongly Disagree</i> <b>1</b>
1	The company has adequate safeguarded to protect the equipment form miss use and theft.					
2	The company has a policy and procedure to identify the maintenance requirement of the production plant and equipment.					
3	The company has equipment maintenance database populated to contains material purchasing information and maintenance information.					
4	The company has a control on the quality of maintenance work done on equipment is specified and confirmed as being achieved.					
5	The company has level of analysis is conducted on plant and equipment problems by identifying start up and early life.					
6	The company has provided training package to the service station or B2B customers to use PPE of the company properly.					
7	A proration of maintenance materials used annually are kept and provided direct from suppliers instead of keeping them in your own store.					

If any \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

***B.3 To assess the system of PPE registration and disposal from the system***

SN	Statement	<i>Strongly Agree</i> <b>5</b>	<i>Agree</i> <b>4</b>	<i>Neutral</i> <b>3</b>	<i>Disagree</i> <b>2</b>	<i>Strongly Disagree</i> <b>1</b>
1	The company has a procedure on disposal of assets at the same time from asset register and physically from the store.					
2	Company apply policy and procedure on the spares holding for equipment removed form service and outdated from the technology.					
3	The company are responsible on the risk reviews process used when decommissioning plant and removing it from service.					
4	The company has list of standards laws and regulation that apply to on the operation with regards scrapping, storing, and selling retired fixed asset.					
5	The company has a trend to work by committee for removing of retired asset physically when sold or donated for third party.					
6	The firm do preparation, planning and risk analysis conducted before plant and equipment is removed from customer site for disposal?					

If any \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**B.4 To assess how the company doing physical PPE verification.**

SN	Statement	<i>Strongly Agree</i> 5	<i>Agree</i> 4	<i>Neutral</i> 3	<i>Disagree</i> 2	<i>Strongly Disagree</i> 1
1	The company has period for PPE verification suitable to the business.					
2	All PPEs of the company are reconciled with asset register and physically counted in site.					
3	The time of physical count or verification period consider the duration of B2B customer project life span.					
4	Company has strong procedure to control or minimize variation of PPE between the system and physically found.					

If any \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**B.5 To identify the planning of PPE valuation and system control**

SN	Statement	<i>Strongly Agree</i> 5	<i>Agree</i> 4	<i>Neutral</i> 3	<i>Disagree</i> 2	<i>Strongly Disagree</i> 1
1	The company software provides input validation or checking when wrong entry provides by system administrator.					
2	The company has plan and period for PPE valuation.					
3	The company has control on the depreciation work done by the system and expected from it.					
4	System administrator and physically asset management departments are in line with PPE control.					

If any \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## **Appendix II Interview**

### **Interview questionnaire**

1. What methods does your organization use to acquire of new equipment ownership?
2. Describe the process of how your organization decides to approve, or not approve, the financing of a capital proposal.
3. What method are used the organization for maintenance of equipment?
4. How maintenance employee doses their job in your organization in terms of sustainability of maintained equipment by using original materials.
5. How the organization dispose the asset? Do you believe the company gets adequate benefit from the disposed equipment's before and after?
6. Do you think the organization kept the asset properly? how?
7. Is there relevant period having the organization to do physical asset verification and what is the advantage.
8. What did you say about the company PPE management?

**Thank you**



# Appendix III Confirmation letter

ቅድስት ማርያም ዩኒቨርሲቲ  
ድኅረ-ምረቃ ት/ቤት



St. Mary's University  
School of Graduate Studies

+251-11-552-45 37/66 011211.18490 Fax 552 83 49 e-mails: sgs@smuc.edu.et, Addis Ababa, Ethiopia

Ref No: smu-0699, 2019  
Date: 21 March 2020, 2020

## Request for Cooperation To: Total Ethiopia S.C

Mr Yishak Ayele , ID No.SGS/0535/2011A is a graduate student in the department of **MBA in Accounting Finance**. He is working on his thesis entitled "Assessment of Fixed Asset Management Practices in Petroleum and Petroleum By Product Distributor companies in Ethiopia :The case of Total Ethiopia S.C .", and would like to collect data from your institution.

Therefore, I kindly request your good office to allow him to access the data he needs for his/her research.

Any assistance rendered to him/her is highly appreciated.

Sincerely

Dessalegn Nigussie

Guidance Counselor & Thesis Coordinator



OK to Proceed  
24 March 2020  
Assefai Haile  
Chief Accountant

Assefai Haile  
General Secretary

