

**AN ANALYSIS OF THE OCCUPATIONAL HEALTH SYSTEMS IN
THE PUBLIC SECTOR. THE CASE OF ZIMBABWE ELECTRICAL
TRANSMISSION AND DISTRIBUTION COMPANY**

BY

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DEDICATION

This is a special dedication to my loving mother Sandra N. Shenje who is always there to support me and my young brother. The future is bright mother!

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Firstly, I am grateful to the Lord for the good health and wellbeing that was necessary to finish this study.

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ABSTRACT

The study analyses the occupational health and safety systems in ZETDC. The study sought to identify the Occupational Health System in ZETDC, the frameworks used in its implementation and to assess its effectiveness in the organisation. The study further identifies the hurdles faced in the use of the Occupational Health and Safety System and proffers recommendations to alleviate them. Literature on the study reviewed various theories which influence the adoption of Occupational Health Systems which include the Theory of Accident Proneness and Heinrich's Domino Theory. In-depth interviews, non-participatory observation and documentary search were utilised in the study. The study identified the basics of ZETDC's Occupational Health and Safety System as based on the need to reduce loss of work hours and increased rate of labour turnover due to the risky nature of electricity transmission and distribution. Institutional and Policy frameworks were identified to enable for the implementation of the Occupational Health and Safety System in ZETDC these included the Office of the Health Officer, Risk Management Department and the Administrative Note and the Operating and Safety Rules respectively. Various activities were noted for the promotion of Occupational Health and Safety in ZETDC which included the Safety Pledge, Culture Change, Risk Management Awards, Safety and Health Committee, Safety and Health Seminars and Workshops, Corporate Level Reports, Safety Circulars, Safety Awareness Campaigns and the Annual Commemoration of the World Safety Day. The effectiveness of ZETDC's Occupational Health and Safety System was evaluated by trend analysis on the number of injuries and fatalities at the workplace between the years 2009 to 2016. The study concludes that though vibrant the Occupational Health and Safety System suffers shortage of health and safety personnel, constrained budgeting and financing, behavioural and negligence tendencies and foreman's dual responsibility with trade unions. On the shortage of health and safety personnel the study recommends that there be the expansion of the health office into a department to counteract the staff shortage and to liberalise occupational health and safety budgeting. The study also recommends policy reorientation to ensure that those who are at supervisor level (foremen) once they hold executive posts in trade unions get elevated to managerial level such that they will make a choice between being in ZETDC and not in a trade union.

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LIST OF ACROYNMS

ZESA	Zimbabwe Electrical Supply Company
ZETDC	Zimbabwe Electrical Transmission and Distribution Company
OHS	Occupational Health and Safety
OHSS	Occupational Health and Safety System
OH	Occupational Health
NSSA	National Social Security Authority
HO	Health Officer
RMO	Risk Management Officer
CRMO	Chief Risk Management Officer

CHAPTER ONE

INTRODUCTION

1.0 INTRODUCTION

The health and safety of the human workforce like the welfare of other core resources in the organisation have, with the dawn of time, emerged important. Whether in the private sector or the public sector the achievement of organisational goals is heavily reliant on the availability of a well motivated and productive staff. Without an entity's commitment to invest in the health and safety of its workforce success is not always guaranteed. Occupational health is therefore-with hindsight to experiences in past decades-emerged as an important element in human resources management. Occupational health is aimed at mitigating the risky relationship that may exist between the worker and the work in a work environment. The World Health Organisation (2001:13) reveals that, "occupational health is aimed at protection and promotion of the health of workers by preventing and controlling occupational diseases and accidents and by eliminating occupational factors and conditions hazardous to health and safety at work." Whilst the subject matter may seem to be one motivated by organisational policy, labour laws in various states have emerged as the main obligator for the establishment of occupational health policies in the workplace. Zimbabwe through the Labour Act [Chapter 28:01] and NSSA Notice No.68 of 1990 establishes the Occupational Health and Safety laws applicable to employers and employees. Noting such legal frameworks in place, this research seeks to analyse the occupational health system prevailing in the Zimbabwe Electrical Transmission and Distribution Company. This chapter therefore introduces the research problem along with its background. Also, the research questions, objectives of the study, delimitations and limitations are outlined in this chapter.

1.1 BACKGROUND OF THE PROBLEM

The dawn of human rights observance ushered in changes in various policy fields. Amongst these was a change in the health and labour policy fields. Occupational health was birthed in the 1800s and early 1900s as issues of industrial hygiene rose to prominence first in the Prussian state. An epidemic of typhus was reported in Silesia amongst a coal mining population when a physician Rudolf Virchow reported of great appalling living and work conditions for the miners and their families (Abrams, 2001:35). This report marked the campaign for medical reforms which later would become issues of occupational health. Seminal works by Charles Turner Thackrah -"The Effects of Arts, Trades and Professions and of civic states and habits of living

on Health and Longevity with suggestions for removal of many of the agents which produce disease and shorten the duration of life” and that of Chadwick 1842 titled, “The Sanitary Condition of the Labouring Population of Great Britain”, served as indictments of the working environment for the working class. These works created pressures in the labour stakeholder communities with various actors particularly the pro-worker psychologically anticipating a shift in the status quo. Trade Unions thus organized strikes over the long working hours and the low wages which had been thought to have an effect on the health of the worker both in terms of their physical endurance and ability to afford health care services. This was further augmented by the works of Chadwick and others on the existence of a class differentiation between health and mortality (Ibid.36). The result of a reduced life expectancy based on class paved way for modern socialism and the cooperative movement which was going to popularize Robert Owen, a textile manufacturer in London. He supported labour unionism and industrial reform and thus advocated for the subordination of machinery to men (Encyclopedia Britannica, 1974).

Perhaps of major importance to note at the time in the early genesis of Occupational Health Systems was the prominence in the use of slave labour and also formal employment across various economic sectors. Goloboy (2008: 50-51), argues that slave trade had been prominent in agricultural labour but was preferred more in the rise of worker unionism in other sectors in the 1850s, a phenomenon which was principally triggered by the Tradegar Iron Works situation. The white formally employed workers in the Tradegar case had started challenging and demanding for better working conditions and wages resulting in work stoppages. These work stoppages resulted in the use of slaves as a counter balancing measure to ensure for the continuation of work. However, the working conditions of the slaves varied with most conditions being deplorable particularly in the industrial settings and the railway building unlike in the agricultural sector. This substitution effect highlights the lack of intention in the employers to improve the working conditions for the health and safety of the workers. Slaves therefore were victims of work related injuries and deaths. This came by as a result of huge neglect on the part of employers to gear their slaves from the harsh working conditions they worked in. Depicted in the picture below is the evidence on the huge neglect to provide any protective gear for the slaves who constructed the railway roads in America.

Fig 1: Neglect of OHS on Railway Slave Work



Source: www.pinterest.com



Source: <http://usslave.blogspot.com/>

In 1861 Abraham Lincoln presented to the Congress of the prioritisation of labour over capital. In his argument Lincoln expressed the contribution of labour to the existence of capital, and

inevitably the reliance of capital on labour (Abrams, 2001:37). The emergence of the utilisation of capital over labour had and has various implications both in the absence and presence of a solid OHS system in the work environment. As already mentioned above, the emergence and reliance on capital production reduced the employer's desire to promote favourable working conditions at the workplace. The prevalence of such unfavourable working conditions was as a result of the substitution effect capital based production had on labour intensive production. A scenario in which a solid OHS exists in the workplace and reliance is on labour intensive production, the introduction of capital in production heavily compromises the status quo. Tadesse and Admassu (2006:2) propose that, "...the insatiable desire for technical advancement has brought about the importation of sophisticated machinery and pieces of equipment not only into the industrial production sector, but also to services and commerce. This invariably has been associated with a change in the structure of the labour force as a whole including a rise in the employment of women. As to be expected the health problems would also change. For example, more emphasis on ergonomics and occupational psychosocial factors would be needed in the services industry." The introduction of machinery in the work place evidently has changed the occupational health dynamics both in terms of the increase in risk of bodily harm and psychological harm.

The International Labour Organization (ILO) formulates international labour standards in the form of conventions and recommendations, thereby setting minimum standards for basic labour rights. In retrospect, the emergence of the need to foster occupational health and safety, led the ILO in 1919 adopting six of the International Labour Conventions as establishing the aims of OHS. These included the hours of work, maternity protection and minimum age of a worker. Being a United Nations organ with 187 members it has emerged the principal detector of trends in the adoption of Occupational Health and Safety through conventions and recommendations globally.

Presently, Zimbabwe has ratified six out of seven ILO conventions on OHS which has in turn led to the crafting of legally binding policy frameworks on OHS. Despite the ratification of these conventions into legal statutes at country level an analysis into the occupational health systems in the public sector reveals high presence of work related accidents. This observation is made concrete with the accrual of statistics which are tabled by NSSA pertaining to work place related accidents in Zimbabwe. The National Social Security Authority (NSSA) is the regulating authority which oversees and reports on the occupational health matters prevailing in Zimbabwe.

1.2 STATEMENT OF THE PROBLEM

Whilst the economic challenges that stung the Zimbabwean economy in the period 2008 to 2009 led to closure of companies and hardships in the lives of many, it also opened doors for huge worker migration. This left companies incapacitated in terms of a skilled and well trained staff to man public sector operations. The maintenance of necessary OHS standards was left insufficiently managed so as to ensure safety at workplaces. The weak Zimbabwean Dollar currency which was losing value everyday meant enterprises were not able to secure with ease their employee's protective clothing. The exodus of experienced workers to greener pastures also meant that the remaining workers had little or no sufficient experience to manoeuvre on their work environment in so far as to cautiously reduce the risk of accidents in their work. These prevailing circumstances meant the weakening of the fabric of OHSS in both the public and private sector work environments.

An overview at the work related deaths and injuries from the year 2008 to 2015 shows a despairing negative trend in work related deaths with 65 deaths in the former year and 54 latter (*The Chronicle, 23/11/2013; Newsday,07/03/2016; New Zimbabwean20/03/2013*). However, though the trend may seem to be evidence of embracing comprehensive OHSS the huge fluctuations of work related deaths from 90 in 2010, 107 in 2012 and 98 in 2014 invites the need to revisit OHSS in both the private and public industries. On the same note work related injuries on the other end have constantly been on the rise from 2008 with 3810 injuries, 3122, 4410, 4158, 5141, 4000, 5491 to 5380 in 2015 subsequently (*The Chronicle, 23/11/2013; Newsday,07/03/2016; New Zimbabwean20/03/2013*).

The astounding fluctuations in the number of deaths and injuries as observed in the statistics outlined above pose questions on the effectiveness of the existing Occupational Health Systems in both the private and public sector industries of Zimbabwe. Statistics of fatalities and injuries at workplaces continued to unnecessarily fluctuate with statistics being too haphazard to establish a favourable trend between the year 2008 to 2015 as illustrated in the table. Whilst various reasons have been proffered for these fluctuations the OHS Systems ought not to be reactionary but rather proactive and taking precautions in reducing the likelihood of harm in work environments.

1.3 OBJECTIVES OF THE STUDY

This research seeks to:

- describe the OHS system in ZETDC;

- analyse frameworks through which the OHS system is Implemented at ZETDC;
- establish the effectiveness of the OHS System;
- analyse the challenges, gaps and weaknesses of the OHS system;
- identify strategies that may be adopted to alleviate work related injuries and fatalities at ZETDC.

1.4 RESEARCH QUESTIONS

- What OHS system is in place at ZETDC?
- What frameworks are utilised in ZETDC's OHS system
- How effective is the OHS system of ZETDC?
- What are the challenges, gaps and weaknesses in ZETDC's OHS system?
- What strategies can be adopted to ensure the effectiveness of the OHS system in ZETDC?

1.5 JUSTIFICATION OF THE STUDY

The study seeks not only to add to the body of knowledge on the matters relating to OHS but it also seeks to ensure that there is an appreciation of the need for effective OHS systems. Whilst there is a branch of knowledge specialising in the more technical issues of OHS, an appreciation of these matters at an administrative level of academia will further universalise such issues at workplaces. The study aims at analysing the OHS systems in place at ZETDC which will reveal the effectiveness, weakness, the gaps, challenges faced and strategies to improve such systems. This information can help the organisation in question and also provide lessons for other such organisations that may have identical OHS. The public being stakeholders in the operation of ZETDC may also draw utility in the knowledge of the OHS systems in ZETDC.

1.6 DELIMITATIONS

The research is centred on the analysis of the OHS system of ZETDC in the provision of Electricity in Zimbabwe. The institutions around which this research shall be conducted are ZESA, ZETDC and NSSA. The research delineates such existing OHS systems in the public sector of Zimbabwe from the case study of ZETDC in Harare as being the centre of operations.

1.7 LIMITATIONS

This research seeks to conduct an analysis of the state of affairs in the OHS system of ZETDC, but this poses challenges in accessing information. This maybe a result of stringent organisational policy which may not welcome investigations by outsiders as well as lack of proper documentation on the statistics of work related accidents and fatalities.

1.8 ORGANISATION OF THE STUDY

CHAPTER ONE: Introduction

This chapter introduces the research problem. In this chapter the problem will be outlined along with its background. The chapter consists research questions and objectives of the study, delimitations and limitations.

CHAPTER TWO: Literature Review

In this chapter, literature review on the subject matter under study is undertaken. It highlights what other scholars have written on the research problem. Theoretical framework is also discussed in this chapter. Theoretical propositions of the selected theories are explained and related to the study.

Chapter THREE: Methodology

The chapter presents the research methodology used in the study including sampling, collecting data, presenting and analysing the data.

CHAPTER FOUR: Presentation and Analysis of Findings

The chapter comprises of presentation and analysis on the research findings.

CHAPTER FIVE: Conclusions and Recommendations

Having analysed data in Chapter Four, Chapter Five will be used to give conclusions on the research as well as proffering recommendations based on the findings of the research.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter reviews literature around the subject of Occupational Health and Safety Management Systems (OHSMSs). The phrases Occupational Health and Safety (OHS) and Occupational Safety and Health (OSH) are used interchangeably in discussing issues that fall under OHSMSs. In this chapter, the concept of OHS is defined, theories of OHS are discussed as they relate to the study, and the importance of OHS, as well as the state of OHS is also discussed.

2.1 CONCEPTUAL FRAMEWORK

2.1.1 Occupational Health and Safety

According to Ali (2008: vii), Occupational Safety and Health (OSH) is generally defined as the science of the anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities and the general environment. For the World Health Organisation (WHO) (2001: 13), “occupational health is aimed at protection and promotion of the health of workers by preventing and controlling occupational diseases and accidents and by eliminating occupational factors and conditions hazardous to health and safety at work”. According to Taiwah and Baar (2011: 120), a joint definition of occupational health endorsed by the International Labour Organisation (ILO) and (WHO) (as revised in 1995) states that:

Occupational health should aim at: the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; the prevention amongst workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the workers in an occupational environment adapted to their physiological and psychological capabilities; and, to summarize: the adaptation of work to man and of each man to his job (WHO 1995: 3).

From the above definitions, it can be noted that pro-activeness (ex-ante measures) is an integral element of OHS or OSH and that OHS also includes ongoing and ex-post processes that are basically aimed at ensuring the well-being of workers at the workplace. It is also noteworthy that as a broad based concept, OHS encapsulates the mental, emotional and physical well-being of the worker in relation to the conduct of his work (Taiwah and Baar 2011: 120).

Systems should be put in place to ensure that OHS becomes an integral and persistent part of organisations. Such systems are known as OHSMSs. According to Robson et al. (2005: 5), after reviewing the various definitions in literature, a review team of a 2012 report by *The Institute for Work and Health* defines OHSMSs as follows:

An OHSMS is the integrated set of organizational elements involved in the continuous cycle of planning, implementation, evaluation, and continual improvement, directed toward the abatement of occupational hazards in the workplace. Such elements include, but are not limited to, organizations' OHS relevant policies, goals and objectives, decision-making structures and practices, technical resources, accountability structures and practices, communication practices, hazard identification practices, training practices, hazard controls, quality assurance practices, evaluation practices, and organizational learning practices.

OHSMSs are generally distinguished from traditional OHS programs by being more proactive, better internally integrated and for incorporating stronger elements of evaluation and continuous improvement (Robson et al. 2005: 5).

2.1.2 The Public Sector

In general terms, the public sector consists of governments and all publicly controlled or publicly funded agencies, enterprises, and other entities that deliver public programs, goods, or services (Dube and Danescu 2011: 3). According to the World Bank (WB) (2012: 1), the public sector comprises upstream core ministries and central agencies, downstream bodies including sector ministries, and non-executive state institutions. As the WB elaborates, upstream bodies include core ministries and agencies at the centre of government, such as the Ministry of Finance and the offices that support the head of government, which have functions that cut across sectors; downstream bodies include both sector ministries and agencies, including education and health providers which deliver and fund services under the policy direction of government and also a diverse group of more autonomous bodies such as regulators and State-Owned Enterprises and corporate bodies; and non-executive state institutions include judiciaries, legislatures, and institutions such as Supreme Audit Institutions.

Dube and Danescu (2011: 3) argue that the concept of public sector is broader than simply that of core government and may overlap with the not-for-profit or private sectors. Public sector organisations include public enterprises as agencies that deliver public programs, goods, or services, but operate independently of government and often have their own sources of revenue in addition to direct public funding (Dube and Danescu 2011: 4). In most cases the government is the major shareholder, and these enterprises partly follow the acts and regulations that govern

the core government (Dube and Danescu 2011: 4). ZETDC, the focus of this study is a public sector organisation, specifically a public enterprise.

2.2 THEORETICAL FRAMEWORK

There is a theoretical dimension to OHS. The accident proneness theory, and the Heinrich's domino theory, and the multiple causation models are used in this study.

2.2.1 The Theory of Accident Proneness

The term accident proneness was coined by psychological research workers in 1926 (Froggatt and Smiley 1963: 1). Its major assumption is that certain individuals are always more likely than others to sustain accidents, even though exposed to equal risk. It insists that accidents occur to a limited number of individuals who have a stable personality trait (Salminen 2015). According to Rodgers and Blanchard (1993: 1), it all began during World War 1 with Greenwood and Woods (1919) who studied workers at a British munitions factory and found that accidents were not evenly distributed among workers, but that a relatively small proportion had most of the accidents. The pair explained this by the notion of 'unequal initial liability', a concept that later came to be called "accident proneness" (ibid). Later (in 1926), Newbold also found that a small number of workers contributed more than their share of accidents and Farmers and Chambers (1939) concluded, following their study, that 'accident proneness' was no longer a theory but an established fact (Rodgers and Blanchard 1993: 1).

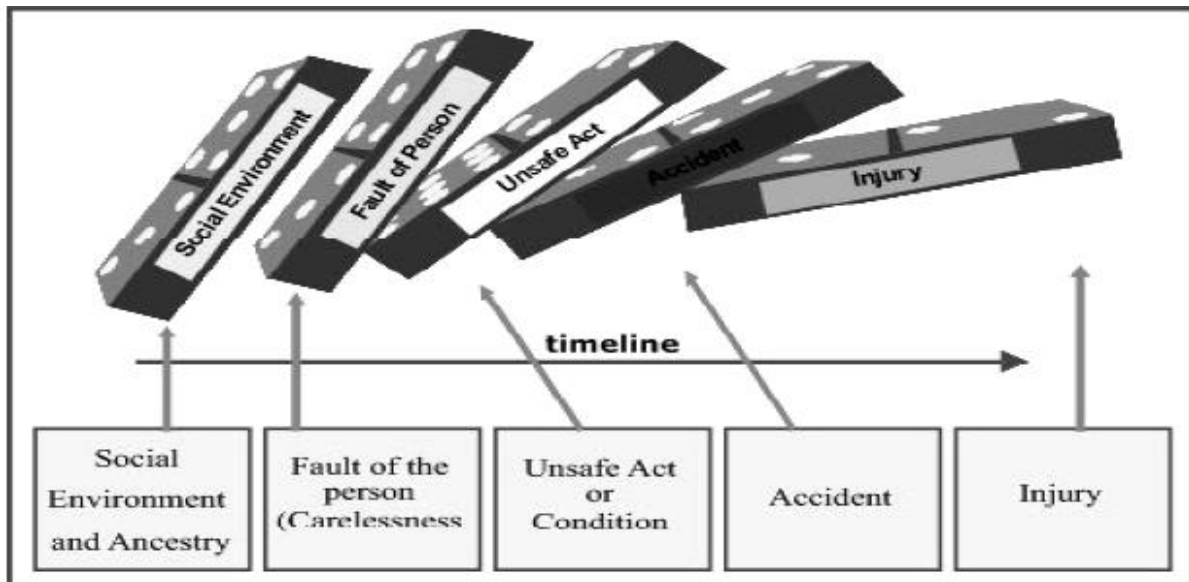
However, additional personality tests in subsequent studies attracted contradictory and confusing results calling into question the accident-proneness concept proposed by Farmers and Chambers, and it lost favour among informed research workers, but not among the general public and particularly, not in some management circles.

This theory is likely to influence the degree of salience given to occupational systems. Where it is dominant and shared amongst the management in an organisation, it directly impacts on the nature and content of the occupational system that would follow. For instance, rather than emphasising measures that would fundamentally change the work environment, management that believes in the accident proneness theory would apportion much more salience to measures that seek to determine prospective employees' accident proneness and decide on the basis of the result whether to take them on board. In other words, avoidance would be emphasised more than prevention at the work place and control.

2.2.2 Heinrich's Domino Theory (1931)

An American Engineer, H. W Heinrich undertook a well-known study into safety management in 1931 that came to be known as the Heinrich's Domino Effect (Cliff 2012: 4). He identified the chain of events and circumstances that ultimately lead to injury as including environmental factors, fault of the individual, unsafe act or condition, accident, and injury. The 'Domino effect' or 'Domino theory' (Heinrich 1931) is based in the assumption that "the occurrence of a preventable injury is the natural culmination of a series of events or circumstances, which invariably occur in a fixed or logical order ... an accident is merely a link in the chain" (Heinrich cited by Safety Institute of Australia 2012: 4). Heinrich determined that 88% of accidents were due to unsafe acts, and only 10% were due to unsafe conditions. Figure 2 below depicts the Domino theory of accident causation

Figure 2: The Domino Effect of Accident Causation



Source: adapted from Hosseinian and Torghabeh (2012: 54)

The five factors (dominos) in the Domino theory are sequential. Ancestry and social environment are the means of acquiring knowledge of customs and skills in the workplace (Hosseinian and Torghabeh 2012: 54). Lack of skills and knowledge of performing tasks, inappropriate social and environmental conditions will lead to fault of person (ibid). According to Hosseinian and Torghabeh, fault of person (carelessness) are negative features of a person personality although these unwanted characteristics might be acquired. For them, carelessness results in unsafe acts or conditions. Unsafe acts and/or mechanical or physical conditions include the errors and technical failures which cause the accident which subsequently leads to injuries.

The five standing dominos will fall one after the other if the first domino (Ancestry and social environment) falls (Hosseinian and Torghabeh 2012). The accident can be prevented only if the chain of sequence is disturbed, for example the unsafe act or condition can be eliminated in order to prevent the accidents and associated injuries (ibid). Heinrich efforts on accident causation theory can be summed up into two points: ‘people’ (humans) who are the main reasons of accidents and ‘management’ which has the responsibility of preventing the accidents (having the power and authority). The theory was blamed for the process of simplifying the human behaviour control in accidents, but became the basis for many other studies on accident causation model with emphasis on management role in accident prevention (Hosseinian and Torghabeh 2012).

A similar finding emerged from the development of the Safety Engineering Model (SEM) in the United States of America where it was found that 85% of accidents were attributable to unsafe acts while unsafe conditions accounted for 15%. The researchers further suggested that unsafe acts are best prevented through education and enforcement, whereas unsafe conditions are best prevented through improved engineering practices and enforcement of these practices (Cliff 2012).

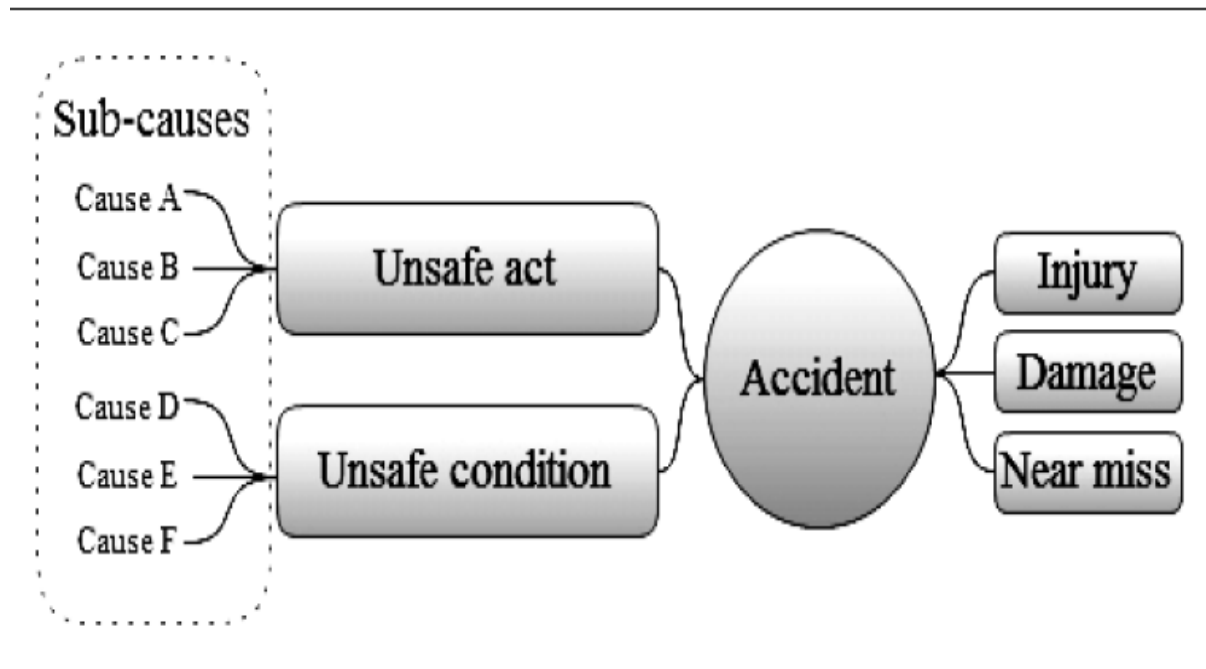
The addition of management and worker behaviour to the basic model included a focus on the empowerment of workers, the adoption of progressive labour practices, the promotion of health and safety as a personal and organisational value, the development of positive worker attitudes, with a focus on behaviour modification, and the application of ergonomic and human factor analyses (Cliff 2012). Further, a focus on occupational health in the workplace was added to the framework introducing an emphasis on protecting and promoting the health of employees in the workplace (ibid). Cliff (2012) notes that its key aspects included the prevention and control of occupational diseases and accidents, the development and promotion of a healthy and safe workplace, the enhancement of the physical, mental and social wellbeing of employees, and the empowerment of employees to conduct socially and economically productive lives. Cliff (2012) argues that these early studies and developments created the platform for the emergence of a more systematic approach to OHS in the workplace.

2.2.3 Multiple Causation Model

The Heinrich domino theory is based on the assumption that an accident is caused by a single cause. Petersen (1971) developed a model based on management system rather than individuals. Figure 3 below shows the ‘multiple causation model’. For Petersen, there are two

major features of the events which lead to an accident, namely an unsafe act and an unsafe condition (ibid). There are multiple causes contributing or leading to both unsafe act and unsafe condition. Finally, in the occurrence of an accident, there are causes and sub-causes behind it (Hosseinian and Torghabeh 2012). Through identification of these multiple contributing causes of accidents, the unsafe acts and unsafe conditions should be prevented from arising.

Figure 3: Multiple Causation Theory



Source: adapted from Hosseinian and Torghabeh 2012.

The significance of this theory lies in that it encourages systematic research into the multiple causes of accidents and is therefore likely to lead to an effective system in abating occupational accidents amongst employees.

All the three theories discussed in this chapter have implications in respect of the actual measures that organisations take as part and parcel of their occupational health systems. Given the nature of work that is done by those employed at ZETDC, one could postulate that it is very likely that accidents of varying sorts will be commonplace. There is therefore need for a comprehensive system that takes into cognisance the peculiarities of the sector. However, this does not debase the above mentioned theories. It is theory that almost always informs practice and, clearly, as regards the present study, all the three discussed theories would be relevant to varying degrees.

The importance of these theories was aptly captured Hovden, Albrechtsen and Herrera,

(2010: 855) cited by the Safety Institute of Australia (2012):

Accident models affect the way people think about safety, how they identify and analyse risk factors and how they measure performance ... they can be used in both reactive and proactive safety management ... and many models are based on an idea of causality ... accidents are thus the result of technical failures, human errors or organisational problems.

The research will therefore establish how the occupational health system measures in relation to the theories identified and discussed early on.

2.3 LITERATURE REVIEW

2.3.1 The Evolution of Occupational Health and Safety: An Overview

Robson et al. (2005) remarked that “OHSMSs have developed considerably over the last 20 years. There are now more OHSMSs in place and available than ever before”. Concern for occupational safety and health is not a recent issue. Varying accounts are given regarding the genesis of OHS. According to Friend and Kohn (2007: 4), many of today’s health and safety concerns were first observed over 2,000 years ago. An early account is associated with the Code of Hammurabi that dates back to approximately 2100 BC which was primarily concerned with personal injury and losses and it prescribed a schedule of punishments and payments for wrongdoers in an attempt to recompense victims of the listed violations (Friend and Kohn 2007: 4). Greek and Roman physicians, including Hippocrates, the Father of Medicine, and Pliny the Elder, a Roman physician and scientist practicing between 400 BC and 300 AD, expressed concern for the health of individuals exposed to the metals commonly used during this period (Friend and Kohn 2007: 4).

Perhaps the earliest well documented application of accident causation knowledge is that of the Du Pont company which was founded in 1802 with a strong emphasis on accident prevention and mitigation (Safety Institute of Australia 2012). Klein (2009), in a paper entitled “Two Centuries of Process Safety at DuPont” reported that the company founder E.I. Du Pont (1772 – 1834) had once noted “we must seek to understand the hazards we live with” and the design and operation of Du Pont explosives factories, over the next 120 years, were gradually improved as a result of a consistent effort to understand how catastrophic explosions were caused and prevented (Safety Institute of Australia 2012). Many of the principles of modern accident prevention theory were formulated in that period (ibid).

The Safety Institute of Australia (2012) further notes that by 1891 management accountability for safe operations was identified as a necessary precept to such an extent that the original Du

Pont plant design included a requirement for the director's house, in which Du Pont himself, his wife and seven children lived, to be constructed within the plant precinct—a powerful incentive indeed to gain an understanding of accident causation.

As described by DeBlois (1915), the first head of DuPont's Safety Division, elimination of hazards was recognised as the priority in 1915 and a goal of zero injuries was also established at that time. Amongst a list of other safety management initiatives which would still be considered appropriate in today's companies' safety programs, the Du Pont Safety Division was established in their Engineering Department in 1915 and carried out plant inspections, conducted special investigations and analysed accidents (Safety Institute of Australia 2012).

For Tetrick and Peiro (2012), the health and well-being of workers has been of concern to industrial and organizational psychologists since the studies carried out at the Western Electric Company at Hawthorne (Mayo, 1933; Roethlisberger and Dickson, 1939) or Taylor's (1911) work although these early works were primarily focused on productivity, performance, and efficiency and were not explicitly concerned with workers' health and well-being. Salminen (2015) argues that until end of the nineteenth century an idea prevailed, based on the fact that most hazards were caused by natural phenomena, that accidents were brought on people by their sins or 'God's will'. With the advent of industrialization in the twentieth century, production moved to factories which were built environments with man-made hazards (ibid).

Occupational health and safety was to later pick up increased salience over the decades. According to Tetrick and Peiró (2012), the global emergence of Occupational Health Psychology (OHP) as a distinct field in the mid-1990s, along with other factors, have brought a more balanced approach between well-being and efficiency in organisations. OHP applies psychological theory and research for the purpose of improving the quality of work life for workers and to protecting and promoting the safety, health, and well-being of workers (ibid). Quick and Tetrick (2003), cited by Tetrick and Peiro (2012) note that it takes a primary prevention perspective, focusing on the elimination of risks to employees' safety and health.

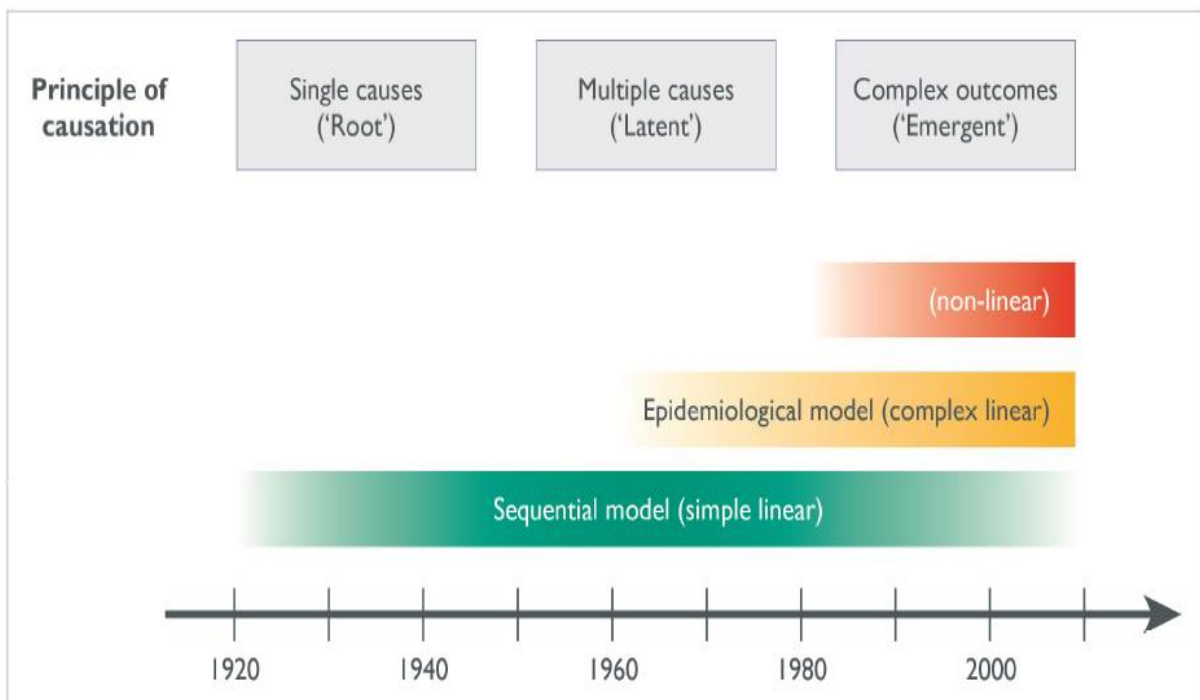
In short, the history of accident models to date can be traced from the 1920s through three distinct phases, namely: the simple linear models, complex linear models, and complex non-linear models (Hollnagel 2010 cited by the Safety Institute of Australia 2012). Each type of model is underpinned by specific assumptions: the simple linear models assume that accidents are the culmination of a series of events or circumstances which interact sequentially with each other in a linear fashion and thus accidents are preventable by eliminating one of the causes in

the linear sequence (ibid). Complex linear models are based on the presumption that accidents are a result of a combination of unsafe acts and latent hazard conditions within the system which follow a linear path (Hollnagel 2010 cited by SIA 2012). The factors furthest away from the accident are attributed to actions of the organisation or environment and factors at the sharp end where humans ultimately interact closest to the accident; the resultant assumption being that accidents could be prevented by focusing on strengthening barriers and defences (Hollnagel 2010 cited by SIA 2012).

The new generation of thinking about accident modelling has moved towards recognising that accident models need to be non-linear; that accidents can be thought of as resulting from combinations of mutually interacting variables which occur in real world environments and it is only through understanding the combination and interaction of these multiple factors that accidents can truly be understood and prevented (Hollnagel 2010 cited by SIA 2012).

Figure 4 below portrays the temporal development of the three types of model and their underpinning principle.

Figure 4: Summary of a history of accident modelling



Source: The Safety Institute of Australia (2012: 4)

2.4 The Importance of Occupational Health and Safety

Occupational health and safety is critical for economic and human rights reasons among others.

Globally occupational deaths, diseases, and illnesses account for an estimated loss of 4% of the Gross Domestic Product (Takala 2002, cited by Taiwah and Baar 2011). According to the WHO Health for All principles and ILO Conventions on Occupational Safety and Health (No. 155) and on Occupational Health Services (No. 161), every worker has the right of access to occupational health and safety services, irrespective of the sector of the economy, size of the company, or type of assignment and occupation (Taiwah and Baar 2011: 119). Warr (1987) notes that “because work is a central part of many people’s lives, it generally is recognised that individuals should have a safe and healthy working environment”. The importance of OHS is aptly underscored by the former United Nations Secretary General, Kofi Anan, cited by Taiwah and Baar (2011: 120) who asserts that “safety and health at work is not only a sound economic policy - it is a basic human right”.

It is no surprise therefore that close to 80 per cent of all International Labour Organisation (ILO) standards and instruments are either wholly or partly concerned with issues related to OHS (Ali 2008: viii). Further, occupational health matters have implications beyond human rights issues. Thus, as Ali further notes, “according to the World Health Organisation (WHO), poor occupational health and the reduced working capacity of workers may cause economic loss of 10-20% of the Gross National Product of a country”. It is therefore important that issues of OHS receive due attention within countries, and work organisations in particular.

It has been observed that the importance attached to OHS varies in different contexts. In this regard, Taiwah and Baar (2011) observe that in countries characterised by a fast growing workforce and a growing informal sector, job security is prioritised at the expense of the need for quality work life and poor countries and companies cannot afford safety and health measures. Unfortunately, the authors found no evidence that any country or company in the long run would benefit from poor safety and health (ibid).

2.5 Frameworks through which Occupational Health and Safety is practised

The practice of Occupational Health and Safety in organisations within countries comes under the rubric of international, regional, and sub-regional frameworks. At the international level, the means of action used by ILO to uphold occupational health and safety include International Labour Standards, provision of technical advice, Conventions and Codes of practice, and the dissemination of information (I.L.O. 2009 cited by Jerie 2012: 282). ILO has adopted more than 40 standards and 40 codes of practice specifically dealing with occupational safety and health (Jerie 2012: 282). Conventions that are concerned with the protection of employees against

risks and hazards include the OHS0 Convention of 1981 (No 155) and the Occupational Health Services Convention of 1985 (No 161) that covers the concept of occupational health and safety (ibid).

The United Nations Universal Declaration of Human Rights (1948) provides for the right to ‘just and favourable conditions of work’ - a right reaffirmed by the United Nations International Covenant on Economic, Social and Cultural Rights of 1976 stating that ‘The state parties to the present covenant recognise the right of everyone to the engagement of just and favourable conditions of work which ensure in particular safe and health working condition’ (NSSA 2008 cited by Jerie 2012: 283). The XVIII World Congress on safety and health at work, held in Seoul, Republic of Korea in 2008 led to the adoption of the Seoul declaration which states that a safe and health working environment should be considered as a fundamental human right and encourages governments to consider the ratification of the ILO Promotional Framework for Safety and Health Convention, 2006 (no 187) (Hope 2009 cited by Jerie 2012: 283).

For Zimbabwe in particular, Jerie (2012: 283) asserts that the country has adopted conventions that include (c155) Occupational Health and Safety and (c161) Occupational Health Services. In terms of the national laws that cover occupational health and safety, Jerie (2012: 283) singles out the NSSA Statutory instrument 68/90 on accident prevention and workers compensation with particular emphasis on the duties of the employers and workers in accident prevention. Jambwa and Chitongo (2013: 305) assert that Zimbabwe uses Statutes, Conventions, and Regulations which are wholly Zimbabwean and others which are regulated by ILO. Some of the laws and conventions which govern the OHS in Zimbabwe are the NSSA Act Chapter 17:04; 5.1 and 68. (1990), the Factories and Workers Act Chapter 151; 08, the Hazardous Substances Act and Articles 51; 37 (2000), the Water/ Wastes and Efficient Regulations 51; 274 (2000), the Mining Management Safety Regulations 51; 109 (1990), and the Occupational Health and Safety Act (1994) (Jambwa and Chitongo 2013: 305).

2.6 The State of Occupational Health and Safety

Though OHS is a debate of antiquity, it has not attracted sufficient attention across the globe, and in Southern Africa in particular. As Moyo et al. (2015) argue, globally, access to OHS by workers has remained at very low levels. On Southern Africa, the authors contend that “because of the infancy and underdevelopment of OHS in this region, literature on the status of this topic is limited”. In spite of comprehensive literature search, the researcher could not get specific case studies where the occupational health systems of given companies or organisations were

analysed for inclusion as comparable experiences in this study. This led to a rather generic assessment of OHS in countries in the region.

In general, the record of OHS has been a sorry one. The ILO (2013) estimates that about 2.34 million people die yearly as a result of work activities globally (ISO 2015). The greatest majority (2 million) were, however, associated with health issues, as opposed to injuries (ibid). The statistics show that there has been an increase in the number of work related deaths. Earlier, in 2005, the ILO had reported that every year 2.2 million men and women are deprived of the right to life by occupational accidents and work related diseases (ILO 2005 cited by Taiwah and Baar 2011). Then, occupational accidents accounted for most of the deaths as opposed to occupational diseases. As ILO (2005), cited by Taiwah and Baar note, “by conservative estimates workers suffer 270 million occupational accidents and 160 million occupational diseases each year”. Further, occupational injuries alone account for more than 10 million Disability-Adjusted Life Years (DALYs) lost, or healthy years of life lost whether to disability or premature death, and 8% of unintentional injuries worldwide (DCPP 2007, cited by Taiwah and Baar 2011).

With respect to Southern Africa, Loewenson (2001) notes that risk management has in the main been practised by the provision of personal protective equipment, which is in fact a last line of defence. Loewenson (2001) is of the view that more effective risk control is obtained by giving a greater emphasis on work environment (engineering) and work organisation (administrative) controls and urges SADC member states to identify priority areas for risk management and promote safe technologies and improved work procedures. Loewenson further asserts that, at the same time, the shortages of inspection services calls for the discussion of options for improving the overall support of inspection services, such as increased budget commitments, more efficient use of inspectorates, and the increased use of cost recovery methods to finance inspection services.

As well, about Southern Africa, Moyo et al. (2015) argue that it is no exception to the scenario where OHS has remained an island whose existence has always been recognized but with no concerted efforts toward support, as evidenced by the significant gaps in human resource capital, training, and education and programmatic approaches in the workplace. In many countries of the SADC region, injury and fatality rates are high or have increased in infrastructural sectors such as transport, electricity, communication and construction, where fatality rates exceed 30/100 000 workers (Loewenson: 2001).

2.7 Challenges of Implementing Standard Occupational Health and Safety Practices

There are challenges that are encountered in attempting to implement the standard OHS. According to Nuwayhid (2004), cited by Pupilampu and Quartey (2012: 152), occupational health and safety remain neglected in developing countries in Africa because of competing national and sector issues and challenges. For instance, the Regional Committee for Africa Report (2004) stipulated that due to endemic poverty and poor performance of African economies, the African region is faced with a number of OHS challenges (Pulplampu and Quartey 2012: 152). The report states that Africa's challenge is how to ensure that workers in both the informal sector and formal sector have adequate health and safety education and are able to actively use this information to better their health and safety practices. The lack of a serious safety and health culture within organisations can also inhibit the implementation of standard OSH practices (Mutetwa and Dozva 2011: 2). As well, very little or no understanding of OSH legislation which governs a particular field on the part of the responsible authorities can pose as a challenge to the implementation of standard OHS practices.

2.8 Conclusion

This chapter focused on reviewing literature around OHSMSs. In particular, the concept of OHSMSs was defined, theories of OHS were identified and discussed, the importance of OHS was discussed, the state of OHS was also discussed, and the general state of OHS and its importance for the electricity sector was discussed. The next chapter focuses on the methodology to be used in this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter elaborates the methodology to be used in the study. The chapter lays out the research design, study area, target population, sampling procedure, data collection methods, data analysis and presentation techniques to be utilised by the research.

3.1 Research Design

Research design is the intended plan for the acquiring of data in research. It therefore maps out the sampling methods, instruments for the acquiring of data and the means to analyse and process data into information (Blanche et al, 2006). This research will use qualitative research methods in examining the OHSS obtaining in ZETDC. This is a descriptive research in which a case study research design will be used to identify the existing OHSS in the public sector enterprises of Zimbabwe. In a descriptive research the researcher observes and then describes what was observed, and because scientific observation is careful and deliberate reference to a particular phenomenon is essential (Babbie, 2010:87). The study therefore focuses on ZETDC as the case study to analyse the OHSS existing in the public sector. The study will utilise purely qualitative research to fulfil the research i.e. sampling, data collection and analysis and the presentation of findings.

3.2 Study Area

The study will be conducted in Harare at the Megawatt ZETDC Head Station and the National Social and Security Association. ZETDC Harare has been selected because it is the conveniently accessible ZETDC offices in the conduct of the research as well it is the major case study which can inform findings. NSSA will also be consulted as it is the central point for the collection and oversight role on all issues affecting the workforce in Zimbabwe, in particular reference OHS matters as relating to the research.

3.3 Target Population

The target population of the study are ZETDC workers at both the policy making level and the operational level in the Harare operational province as well as NSSA workers who are directly involved with the maintenance of OHS standards and statistics in Zimbabwe. Target population

has been defined by various scholars as the concretely specified large group of many cases from which the researcher draws a sample (Neuman, 2014; Patton, 2001). Babbie (2010:123) pose it that target population is the source of primary data to answer the research questions (Babbie, 2010:123). The study may go on to further consult experts and academics in the area of OHS in Zimbabwe as these would be vital primary information sources.

3.4 Data Collection Instruments

3.4.1 In-depth Interviews

Interviews are a research method in which the research participant will be questioned on a predetermined list of questions on a face to face encounter. According to Ibid.306, “Qualitative interview is essentially a conversation in which the interviewer establishes a general direction for the conversation and pursues specific topics raised by the respondent.” According to Polit and Hungler (199:12), “An interview is a data collection method through interaction involving an interviewer (person interviewing or asking questions) and an interviewee (person being interviewed or questioned) in order to obtain valid and reliable information.” Whilst there two types of interviews which namely are structured and in-depth interviews the latter will be used as the research enquiry is purely qualitative. Therefore in-depth interviews will enable for collection of richer and more detailed account on the subject of research inquiry unlike in structured interviews which are solely for quantitative research.

Therefore for this research in-depth interviews will be carried out with workforce within ZETDC and also other major stakeholders in the field of Occupational Health which may include those from NSSA and also the MOHCC. Particularly the majority of the interviews will be with Harare based ZETDC, NSSA and MOHCC workforce. The particular organisations have been selected as they are major stakeholders in the area of occupational health and further more in particular reference to the case study. Where not reachable in person telephone interviews will also be used to compliment the collection of required research information.

3.4.2 Documentary search

Desk research is a technique of research upon which the obtaining of results is based on the enquiry on already available literature. According to Bailey, (1994:48) documentary search

refers to, “the analysis of documents that contain information of the phenomenon under study.” Such literature may include journal articles, newspaper articles, publications from various bodies which are interested in the OHS at workplaces in Zimbabwe which may include NSSA and others. This may also be used where the particular interviewees might provide further sources to read for better understanding of the subject matter.

3.4.3 Non-Participatory Observation

Marshall and Rossman (1989:79) define observation as, "the systematic description of events, behaviours, and artifacts in the social setting chosen for study." Observations enable the researcher to describe existing situations using the five senses, providing a "written photograph" of the situation under study (Erlandson et.al, 1993:91). Whilst there exist different stances of observation i.e. the types of observations it is in their differentiation that one is best suited for either a qualitative or quantitative study. There exist the complete participant observation, participant as observer, observer as participant and the complete observer stances to observation as a tool for data collection (Kawulich, 2005:8). The study is going to utilise non-participatory observation with a complete observer stance to enable for feasible understanding of the OHS utilised in the conduct of work in ZETDC. Non-participatory observation is therefore going to be utilised in particular in identifying the OHS measures used in the field work of ZETDC personnel.

3.5 Sampling

Babbie (1959:159) propounds that “sampling is the process of selecting a subset of observations from among many possible observations for the purpose of drawing conclusions about that larger set of observation.” Sampling can be grouped into probability and non-probability sampling. Probability sampling gives everyone in the population an equal and known chance of being selected. Techniques utilized in probabilistic sampling include Simple random, systematic, stratified, cluster and multi-stage sampling. Non-probability sampling on the other end does not offer everyone the chance of being selected. Non probability sampling techniques include judgmental, quota, convenience and snowball sampling. The study will make use of non-probability sampling methods to obtain the data needed for research which include purposive and snowball sampling.

3.5.1 Purposive Sampling

Non-probability sampling is defined by Berg (2001:28) as the sampling criteria in which the elements in the population have an unequal and low chance of being selected into the sample

and this includes purposive sampling as a technique. This is most common in researches which require highly specialist knowledge within the field of research. This technique of sampling is best for the research as it requires the knowledge of experts for example, in this case requiring technical knowledge of those who are actively involved in the sustenance and practice of OHS in ZETDC. As proposed by Berg (2001:34), when developing a purposive sample, researchers use their special knowledge or judgement about some group to select subjects who represent this population so will this research locate primary informants to inform research findings. Therefore this sampling technique will be utilised in the research methodology of this study to select key respondents for research findings.

3.6 DATA PRESENTATION

Data presentation is the stage in which the findings of this research shall be outlined. The research findings of this research shall be presented in thematic sub-headings for the qualitative data. Thematic sub-headings have been defined as the broad categories which outline and highlight the recurring ideas or lessons from data gathered by the researcher (Silverman, 2011:119). Graphs shall be used to aid the analysis of varying statistics on the effectiveness of existing OHS systems.

3.5 DATA ANALYSIS

Data analysis is a detailed examination of data obtained from research to interpret and explain its meaning. This research therefore will use content analysis for data analysis.

3.5.1 Thematic Analysis

Thematic analysis of data involves the search for themes that are constantly being raised in the raw data and interpreting these for research questions (Guest, 2008: 138). Thematic analysis has been defined by Silverman (2011:119) as the application of codes to the data collected in order to ascertain if there are any recurrent patterns in consulted literature and interviewees' responses. Therefore, the method of analysis shall in this research analyse the recurring themes raised in the raw data obtained through the research instruments for arrival at research findings. The study shall therefore identify the recurring themes in the gathered data to analyse the OHS systems in the public sector of Zimbabwe.

3.5.2 Content Analysis

Babbie (1992:313) argues that content analysis methods may be applied to virtually any form of communication. The classic question of communication research is who says what, to whom,

why, how, and with what effect for the exhaustive analysis of the information shared (Ibid.315). DeMarrais and Lapan (2004:79) defines content analysis as an examination of written documents, interview texts or speeches to identify key motifs that helps in comprehending the subject under study. Therefore content analysis will be used in the study as it works in all forms of communication, written or oral by using coding in some conceptual framework. Therefore coding is crucial in this method of data analysis. This study will therefore utilise content analysis to analyse literature on OHS to enrich the findings of the research.

3.6 CONCLUSION

The chapter presented the methodology to guide the researcher in sampling, collecting data, presenting and analysing the data. The target population has also been presented. The next chapter will present the major findings and analysis of the data collected through fieldwork and documentary review.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF FINDINGS

4.0 INTRODUCTION

The chapter presents and analyses the major findings of the study. The chapter utilised documentary evidence in the form of text books, academic journals and internet material for the collection of data pertaining to the study. Research findings were also generated through interviews.

4.1 Demographic Attributes of Respondents

Organisation	Interviews Conducted	Sex
ZETDC	6	1 female and 5 males

The study included managers from ZESA Holdings and ZETDC namely; The Chief Risk Managing Officer (ZETDC), The Chief Risk Officer (ZETDC)-Mr Maseko, The Human Resources Manager (ZETDC)-Mr Major, The Health Officer (ZETDC-HQ)-Mrs Mutombo, The Health Officer (ZETDC- Wayne Street)-Mr Chinamano and the Risk Officer (ZETDC)-Mr Chikanda,

4.2 Response Rate

The study sought to carry out nine interviews of which only six were done, thus the response rate of the study was 67%.

4.3 RESEARCH FINDINGS

4.3.1 History and Profiling of ZETDC

Zimbabwe Electrical Transmission and Distribution Company (ZETDC) is a public enterprise wholly owned and controlled by the central government. It was established in the year 2007 as a subsidiary of Zimbabwe Electricity Supply Authority (ZESA Holdings Pvt Ltd). ZESA was established in the year 1986 through an Act of Parliament Chapter (13:09) becoming a statutory board under the Ministry of Transport and Energy. ZETDC's establishment was as a result of a merger between the Zimbabwe Electrical Transmission Company and the Zimbabwe Electrical Distribution Company. The merger resulted in other subsidiaries which include Zimbabwe Power Company (ZPC), ZESA Enterprises (ZENT) and Powertel. ZETDC is

mainly tasked with the transmission and distribution of electricity to diverse clients in the state of Zimbabwe.

4.3.2 Basics of Occupational Health in ZETDC

Unlike traditional personnel management, the discourse of Strategic Human Resources Management is one which has pressed emphasis on the importance of the workforce as assets and not expenses to the operations of the firm. Occupational Health and Safety has therefore tallied with this development with a goal of ensuring the safety and health of the employees. The public sector through the New Public Management has therefore revealed the need to adopt robust systems and checks for worker health and safety in the workplace.

The ZETDC as a public sector enterprise has enshrined within its organisational goals and objectives the need to uphold worker health and safety both in and outside of the workplace. This is outlined in the Mission Statement of ZETDC which seeks to establish safe and reliable transmission and distribution of electricity to the clients and for the workers. Specifically the Human Resources Manager of ZETDC, Mr Maja highlighted the departmental goals which included ensuring high employee productivity and particularly improving staff health and safety. The respondent noted with concern how worker productivity is affected by the health and safety of the workforce citing that worker productivity meant the amount of output produced per work hour by an employee. It was further highlighted that an ill worker would not produce as much as a healthy worker would both due to absenteeism and lack of efficiency at the workplace. In the same vein Mr Maja argued that work related accidents would reduce work output as a result of victim absenteeism and the moral breakdown of colleagues.

The ZETDC transmits and distributes electricity and the dangers for the worker are electrocution and others such as falling off electrical infrastructure. ZETDC has put in place measures to curb the recurrence of work related accidents in both areas of transmission of electricity and its distribution. To achieve this, institutional policy provides for safety procedures which guide the carrying out of work by the employees at the workplace. These safety procedures are enshrined in the Live Lines Rules and Hazardous Rules which are stipulated in the OHS blueprint document- the *Electrical Safety Rules* which are to safeguard and protect the interest of the worker and the organisation. This illustrates therefore one of the basics of OHS observance in any organisation to have guidelines on the operationalisation of OHS.

ZETDC also has in place the health interest of its workforce at policy level to ensure the

continued supply of skilled expertise and to reduce the loss of work hours to sickness and labour turnover to possible deaths. ZETDC aligned itself with the National AIDS policy of the central government by spearheading the raising of awareness on the matters of HIV/AIDS and also cervical cancer in the organisation. Mr Chinamano, a health officer at ZETDC (Wayne Street) alluded to the joint partnership with the National Aids Council to try and raise proper awareness which would hopefully witness a reduction in the number of HIV/AIDS infected workers at the organisation.

4.4.3 Frameworks for the Operationalisation of OHS in ZETDC

Occupational Health and Safety issues have emerged as legally binding across the globe and ZETDC as a public enterprise in Zimbabwe has not been an exception. OHS is regulated in ZETDC by international conventions which are derived from central government regulating statutes and regulatory institutions. Jerie (2012: 283) asserts that Zimbabwe has adopted conventions that include (c155) Occupational Health and Safety and (c161) Occupational Health Services. In terms of the national laws that cover occupational health and safety, Jerie (2012: 283) singles out the NSSA Statutory Instrument 68/90 on accident prevention and workers compensation with particular emphasis on the duties of the employers and workers in accident prevention. Jambwa and Chitongo (2013: 305) assert that Zimbabwe uses Statutes, Conventions, and Regulations which are wholly Zimbabwean and others which are regulated by ILO. Some of the laws and conventions which govern the OHS in Zimbabwe are the NSSA Act Chapter 17:04; 5.1 and 68. (1990), the Factories and Workers Act Chapter 151; 08, the Hazardous Substances Act and Articles 51; 37 (2000), the Water/ Wastes and Efficient Regulations 51; 274 (2000), the Mining Management Safety Regulations 51; 109 (1990), and the Occupational Health and Safety Act (1994) (Jambwa and Chitongo 2013: 305). Whilst these enactments are there to regulate worker health and safety at the workplace it is paramount to note that these acts are adopted by institutions on the basis of the activities that they undertake ZETDC likewise is regulated by the NSSA Act [Chapter17:04], Factories and Workers Act and the Occupational and Safety Act.

4.4.3.1 Policy Frameworks for OHS Implementation in ZETDC

The ZETDC OHS implementation framework is enabled by institutional structures in place as well as the policy dictates by the organisation. Internal enactments which guides the implementation of the OHS in ZETDC are informed by the Administrative Note which Mr Major the Human Resources Manager cited as the DNA of the organisation's operations. The

Administrative Note is a circular of guidelines which inform the operations of ZETDC in all departments and areas of interest. Pertaining to OHS the administrative note outlines the Safety Procedures which are to be followed at the shop floor levels both at the level of transmission and distribution of electricity. The measures to be taken are enshrined in an organisational document titled the Electrical Safety Rules in which Live Lines Rules, Hazardous Rules, Operating and Safety Rules are coded.

The Live Lines Rules are there to provide the procedures to be followed in the work of any ZETDC employee when they have to be in contact with the naked live electrical transmission cables. The rules on live lines propose the channels of communication to be followed before any work can be commenced on such work. Amongst some of the key propositions is the need to secure A “Live Line Permit to work” by the Controller to ensure that there is complete closure of the lines from an active system. It also stipulates the gear to be worn and instruments in the conduct of such work. Hazardous rules on the other hand stand to guide the worker on the expectations placed on the worker for the work sites in which may be perceived to present some form of danger. These rules therefore set precautions that have to be taken as well as communication channels which ought to be used to ensure that risk is reduced. Such hazards include but not limited to sparking electrical cables, weak electrical poles, electrical cables lying on the ground and a leaking electrical machinery.

Operating and Safety Rules pertain to the work of current breakers, isolators and generally all other operations which may take place in a depot and substation. Engineer Chibanda, one of the Harare Main circuit Depot personnel pointed out that Operating and Safety Rules are there to place expectations on all employees in the high danger areas such as the main circuits from which electricity is transmitted for distribution. Perhaps the major resolves of this set of rules are the instructions on the restrictions surrounding the carrying out of any operations without the Controller’s authorisation except in cases of immediate danger to any persons. Communication lines are laid down with regard to the channels which ought to be followed concerning to servicing and repairs in the substations and depots. Pertaining to communications in the rules book timely switches should be observed. Cautions and precautions against certain acts in these work stations are alluded to, and these include; the smoking and the existence of open flames in the underground chambers and cable galleries as well as the use of proper fire-fighting equipment in the work areas.

4.4.3.2 Institutional Frameworks for OHS Implementation in ZETDC

ZETDC as a subsidiary of ZESA exists in a framework of departmentalisation which is almost similar to Zimbabwe Power Company and Powertel. However, it is important to note the significance of ZETDC's structure to the need for worker's safety and health. Whilst ZETDC has a peculiar organisational structure it receives policy directives from ZESA Holdings.

4.4.3.2.1 Office of the Health Officer

The ZETDC has a Health Officer at the headquarters level, which is the highest level of reporting for five other health officers in the five regions of ZETDC's operations. The office is tasked mainly with the upholding of the issues of OHS both at headquarters level and at station levels which are across Masvingo and Bulawayo (21 stations). The Health Officer's office is one which is tasked with the creation of a budget for OHS activities; initiating health and safety related training and development in ZETDC; attending to the requirements of workers who would have been involved in workplace accidents, maintaining a health insurance register for all employees and carrying out inspections on the upholding of OHS standards at the various stations and depots it oversees.

Budgeting for OHS in ZETDC is carried out by the Health Officer at the Harare Headquarters. This budget outlines the items which shall be required for the protective wear for the workers which may include overalls, gumboots, safety shoes, gloves and helmets. Other budgetary items include first aid kits, training and development fees and expenses as well as the health awareness materials. These budgets are formulated by the Health Officer at the headquarters level for the entire branches, depots and stations in Zimbabwe. The budgetary allocations for the Health Officer are allocated through the Human Resource Department. The Human Resource Department is the one which approves the budgetary allocation for OHS for the Health Officer's office.

The Health Officer is also responsible for the identification of training and development gaps in the workforce for OHS across regions. According to Mrs Mutomba these gaps maybe noted through the tracing of increases in injuries and deaths of workers at the workplace as a result of a certain persisting negligence. Whilst this is one of the measures used to establish the need for further training procedures at the workplace, the need for constant raising of health awareness on ailments which may affect the health of the worker in their personal capacity is valid. The health officer at the headquarters is responsible for designing the training and development health programs for the workforce in ZETDC. Whilst such training and

development maybe outsourced the health officer is the one who organises and outlines the areas for training. This training and development is therefore crucial in ensuring the upholding of the highest standards in OHS.

4.4.3.2.2 Risk Management Department

The Risk Management of ZETDC like any other has the mandate to ensure the forecasting and evaluation of financial risks together with the identification of procedures to avoid or minimize their impact. Mr Maseko the Chief Risk Manager (CRM) at ZETDC Headquarters cited the effect the health and safety of the workforce has had on the profitability, efficiency and effectiveness of the organisation as a whole. In an interview with the CRM, he made a key note of risk prioritisation as a major measure to identify the highest risks which may affect the viability and achievement of ZETDC's goal. The Chief Risk Management Office has the responsibility of drawing up a risk register at the beginning of the business year which outlines the highest risks which will possibly affect the attainment of organisational goals. In the past ten years of the establishment of the risk register by the CRM issues of OHS have been noted to be in the top ten risk profile.

To alleviate and reduce risks which may be associated with the OHS of workers the department establishes joint committees with various department and offices within ZETDC itself and across ZESA subsidiaries to address common risk issues which may affect them. These committees include risk managers from all ZESA subsidiaries, health officers from ZETDC, ZERA, ZPC and PowerTel, and other departmental heads whose departments may have been noted to be posed by high risk according to the risk profile for example Human Resource Management, Loss Control Department, Department of Operations and the Public Relations office. The establishment of these committees are such that where risk is foreseen necessary measures may be taken to ensure that the risk is minimised or alleviated. With regard to the issues of accident proneness at the workplace the committees have resolved to introduce various programs which are aimed at ensuring that the observance of safety at the workplace is prioritised. Amongst these measures has been the beefing up of financing towards worker health and safety, introduction of the Risk Management Awards and the Pledge of Safety. These initiatives all have a direct bearing on the implementation of OHS at ZETDC as they are measures to minimise and alleviate the risks associated with the neglect of health and safety standards.

4.4.4 Programs and Activities for OHS promotion

Whilst the implementation frameworks of the OHS in ZETDC are laid down various activities and programmes are used to further promote the health and safety of employees. These programmes and activities include but not limited to Safety Pledge, Culture Change, Risk Management Awards, Safety and Health Committee, Safety and Health Seminars and Workshops, Corporate Level Reports, Safety Circulars, Safety Awareness Campaigns and the Annual Commemoration of the World Safety Day.

4.4.4.1 Safety Pledge and Culture Change

Organisation Culture has been defined as the system of shared values and beliefs which govern how people behave in an organisation. These shared values have a strong influence on the people and the way they conduct their work in the organisation particularly how they perform their jobs. ZETDC introduced a cultural change program in the first quarter of 2016 so as to break a fabric of values and beliefs which was not in line with the rolled out Safety and Health organisational policy as well as the HIV/AIDS policy. Whilst the cultural change programme was there to ensure positive results in other areas of ZETDC's business, Mr Maseko is on record pointing out that it was also to ensure that Health and Safety be recognised as a fundamental basis of organisational success amongst the employees. One of the measures taken in the culture change programme has been the introduction of the Safety Pledge in ZETDC. The safety pledge that is recited by ZETDC workers every day at 0800 hours seeks to form a value of upholding safety and health which is thought to have a positive contribution to the goals of reducing work related injuries and deaths.

4.4.4.2 Risk Management Awards

The Risk Management Awards are a product of the Department of Risk Management in liaison with all other departments in ZETDC. These awards were introduced in the year 2015 as measures to bring a sense of competitiveness in employees in the carrying out of their work in various areas with the potential to pose risks to the organisation. The awards target various areas on which diligence is noted in the reports of losses or anomalies that are recorded which include Health and Safety at the Workplace, Electricity Distribution, Customer Service, Substations Services and the Overall Winner award. The awards are thought to bring competitiveness in the upholding of the Health and Safety standards amongst other achievements at the various substations and depots of ZETDC in the various regions. The awards are moderated by an audit team which comprises Chief Risk Officers, Risk

Management Officers, Safety and Health Officers and Insurers Representatives. Mrs Mutomba pointed out that indicators on the awarding of a health and safety award were and are based on the number of natural deaths, work related accidents and the display of health and safety notices.

4.4.4.3 Safety and Health Committees and Seminars

One of the fundamental principles of upholding and promoting of OHS in ZETDC is the need for constant training and development on matters of health and safety in the workplace. Mr Maseko reiterated the position that the executive level plays together with the managing staff in noticing the gaps that may exist in upholding health and safety at the workplace. These observations once noted are discussed in Safety and Health Committees which are convened annually. These committees comprise health officers of all regions and risk management officers to discuss the areas which may need attention by educating and re-educating the employees in terms of health and safety. These seminars may take the form of workshops off work or on site by outsourced facilitators or internal facilitators to raise awareness and the upholding of health and safety in ZETDC.

4.4.4.4 Corporate Level Reports and Safety Circulars

ZETDC publishes corporate level reports annually which outlines the projects and achievements of the organisation annually. These reports are compiled by the Chief Risk Management of ZETDC Mr Maseko who outlined that these are based on reports submitted by the Departmental Heads. These reports are argued to boost the observance of safety and health in ZETDC as a result of the inclusion of matters that relate to safety and health in ZETDC that is the inclusion of work related accidents, seminars and workshops reports on OHS as well as special messages which may be OHS related. Further to the annually published reports safety circulars are reports which are circulated in the organisation where there would have been a work place related accident. This report outlines therefore the nature of the accident the location and designation of the work and most importantly the cause of the accident. These circulars were cited to raise awareness on the negligence resulting in the accident and therefore cautioning fellow employees to avoid making the same mistake.

4.4.5 Effectiveness of ZETDC's OHS System

Any occupational health system functionality is measured particularly by the number of work place related accidents in terms of the injuries and fatalities recorded. ZETDC has maintained records on the electrical accidents both for the staff and members of the public. The research

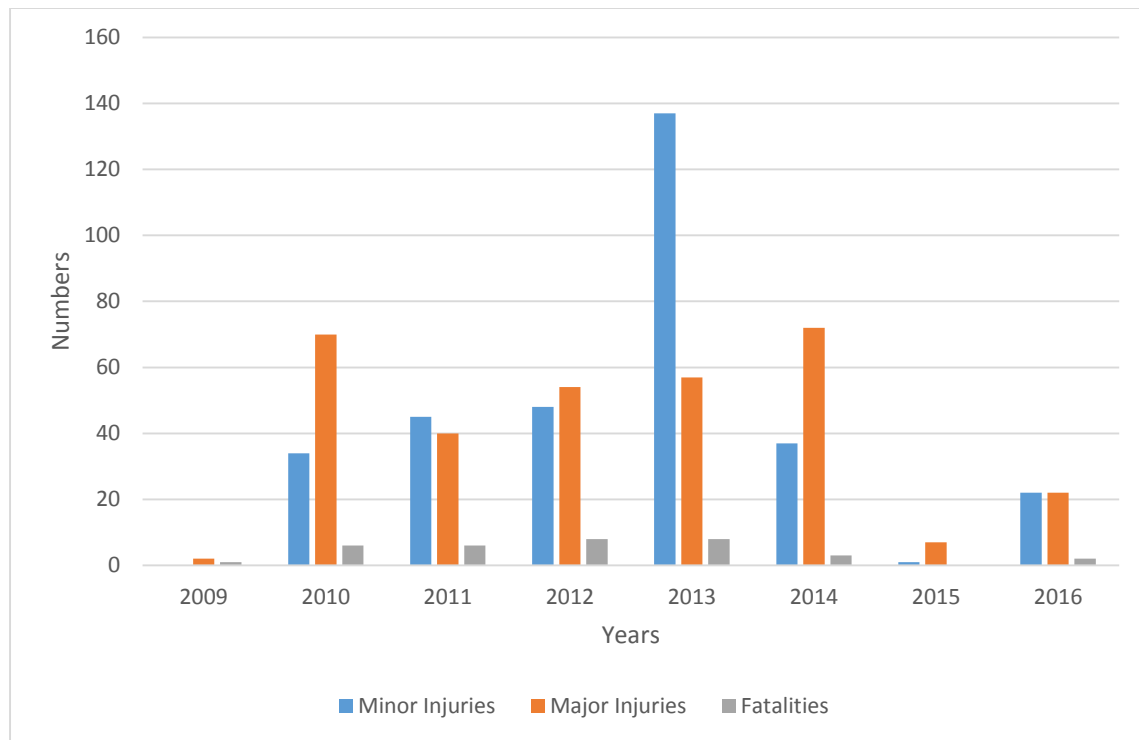
sought to establish a position on the effectiveness of ZETDC from the year 2009 after the resurgence from the post 2008 economic crisis. A trend will therefore reveal this final position.

Fig 5. Statistics of Work Place Related Accidents at ZETDC 2009-2016

Statistics for Electrical Accidents at ZETDC								
	2009	2010	2011	2012	2013	2014	2015	2016
Minor Injuries	0	34	45	48	137	37	1	22
Major Injuries	2	70	40	54	57	72	7	22
Fatalities	1	6	6	8	8	3	0	2

Source: Fieldwork

Table 1 Statistics of Work Related Accidents at ZETDC 2009-2016



Source: Fieldwork

Minor injuries as depicted in the statistics outline those work related accidents which are treatable at the worksite using first aid kits and they do not result in absence at work. These may include bruises, minor burns and knocks. Major injuries are those injuries which cannot be treated at the workplace using first aid kits. These types of injuries are such as those requiring special treatment and will result in absence at work. Fatalities are those which result

in the employees losing their lives.

2009 was a period when reporting systems on work related accidents began to be revived after the economic crisis of post 2000 in which it was left short staffed. The low numbers recorded for the injuries and fatalities in 2009 was a result of under reporting coupled with a weak reporting system which was still ineffective. Therefore 2009 statistics do not reflect the true figures on the injuries and fatalities which happened at work during this period. 2010 statistics showed a huge increase on the recorded numbers of injuries by 105 and by six fatalities. This was as a result of the noted under reporting which was outlined earlier. 2011 noted a drastic fall of injuries from 104 in 2010 to 85 which is an 18% reduction from the previous year. Fatalities were however maintained at six deaths. 2012 showed marginal changes in the recorded number of injuries with an increase of 20% whilst fatalities had a 33% increase. 2013 maintained the same numbers of deaths and a drastic increase in injuries by 92 injuries. 2014 witnessed a fall in the number of deaths by 63% and a fall in the number of injuries by 44%.

2015 had a significant introduction being made in line with OHS which included the introduction of the Safety, Health and Education policy statements and HIV/AIDS policy statements. This is also the time when Risk Management Awards were introduced in ZETDC to try and alleviate risks amongst workers by introducing competitiveness in the various departments in the organisation. Whilst these could have had a positive effect on the performance of the OHS indicators the reports on the number of deaths were however flawed by under-reporting with the employees from various stations and depots not reporting on these to try and win in the risk management awards. The reporting structures however could not cover for fatalities and major injuries as was the case for minor injuries. This period therefore shows the effectiveness of the OHS initiatives introduced at this time as zero fatalities were recorded which in any case could not be covered up because of the compensation procedures which require executive level approval. Also the major injuries which would need company compensation and health insurance reduced from 77 to seven major injuries in the same period citing the major positive contribution of the initiatives. 2016 was noted to have more compliance in terms of reporting structures and the noted increase to two deaths could have been an inherent occurrence. However, the noted number of 44 injuries compared to previous years namely 2010 to 2014 was a significant improvement of over 36%.

4.4.6 Challenges encountered in OHS operationalisation

In the implementation of the OHS various challenges are faced in ZETDC, amongst these

include shortage of health and safety personnel, constrained budgeting and financing, behavioural and negligence tendencies and foreman's dual responsibility.

4.4.6.1 Staff Shortage

The Health Officer at ZETDC (Mrs Mutomba) cited that one of the challenges that she faces in the execution of her duties along with other health officers in various provinces was that of short staffing. In an interview she expressed her worry on the lack of proper departmentalisation to cater for the needs of health and safety in ZETDC. Amongst these responsibilities include budgeting for OHS activities, initiating training and development which are health and safety related in ZETDC, attending to the requirements of workers who would have been involved in workplace accidents, maintaining a health insurance register for all employees and carrying out inspections on the upholding of OHS standards at the various stations and depots she oversees. Shortage of staff is manifested by the position she plays in overseeing issues of OHS both at headquarters level and station levels which are across Masvingo and Bulawayo (21 stations). She pointed out that coordination failed in covering these stations as there were no trained persons to report on the events occurring thereof. The failure to obtain such experienced persons meant the lack of coordination in reporting structures.

4.4.6.2 Budgeting and Financing

The budgeting function for OHS in ZETDC is carried out through the Human Resource Department with a proposed OHS budget items having been submitted by the Health Officer at the headquarters. The health officer however lamented that this arrangement meant she has little autonomy in deciding any other issues that may need urgent attention to which allocations may need virementing. Whilst this could be done in the current arrangement the red-tape meant heavy delays in the response to urgent health and safety needs in the organisation. Despite the issues of financial independence Mrs Mutomba cited the lack of adequate financial allocations to enable the requisition of high quality safety clothing. This therefore has resulted in safety clothing of low prices and low quality being procured for the workers.

4.4.6.3 Industrial Relations

Mr Maseko the Chief Risk Manager noted that in the work of a foreman part of his job description was to ensure that workers follow proper health and safety procedures. It is also the task of the foreman to ensure that disciplinary measures are instituted where a worker would have contravened the safety rules and procedures. However, he cited a strange situation that

existed along industrial relations lines with particular reference to the position of foremen and what is expected of them. One foreman is known to be a president of a trade union meaning that he has conflict of interest in the carrying out of his duties. A foreman is expected to oversee and discipline workers if they go against what is expected of them by the organisation. On the other hand trade unions seek to have many workers joining them and representing them against top management. Hence therefore the particular foreman's job is questionable on how he balances the interest of the organisation against that of the trade union. How will he lure workers to the trade union at the same time institute disciplinary measures against them?

4.4.7 CONCLUSION

This chapter sought to present major findings and analyse data collected in the field. Broad themes were outlined which included the basics of OHS in ZETDC, frameworks for the operationalisation of OHS, activities and programs to promote OHS, effectiveness of ZETDC's OHS system and the challenges faced in the upholding of the OHS in ZETDC. The next chapter concludes and proffers recommendations to the research.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter focuses on the conclusions and recommendations on the findings presented in the previous chapter. Conclusions are based on the major findings whilst recommendations are informed by the research findings presented in the previous chapter.

5.1 CONCLUSIONS

The study concludes that ZETDC adopts a Strategic Human Resources Management perspective in the maintenance of its workforce. It thus regards its personnel as an asset to the organisation and employs policies on safety and health as a means to ensure the safety of workers and their health as broad occupational health goals. The organisation has two policies which supports the achievements of OHS goals which are The Safety and Health Policy and the HIV/AIDS Policy. Furthermore in the transmission and distribution of electricity, ZETDC employs the use of Live Lines and Hazardous Rules to safeguard workers. The rationale of employing a robust OHS system in ZETDC has been aimed at minimising the loss of work hours both to injuries and fatalities as well as retaining the fabric of expertise invested in the worker by the organisation.

ZETDC subscribes to the International Labour Organisation OHS conventions, NSSA Statutory Instrument 68/90 and several other statutes which concern the safety of the worker amongst them the Factories and Workers Act [Chapter 151:08] and the Occupational Health and Safety Act. These form the regulatory basis on which ZETDC implements their OHS system. Further to these regulatory frameworks are the policy and institutional frameworks which act as blueprints to the operationalisation of the OHS. Policy frameworks include the Administrative Note, The Live Lines Rules and the Operating and Safety Rules. The Administrative Note is a much broader document which establishes the procedural expectations in the implementation of all work in the organisation. The Live Lines Rules and Operating and Safety Rules pertain to the specifics on the procedures of all electrical work at the station and depot level which include the communication channels and the safety clothing to be used.

Institutional frameworks which enable the operationalisation of ZETDC's OHS are visible by the existence of the Health Officer's Office and the Risk Management Department. The Health

Officer is responsible for ensuring financial planning for health and safety in ZETDC as well as ensuring proper coordination, awareness promotion with issues of OHS. Health Officers also ensure the maintenance of high standards of OHS by overseeing the observance of safety procedures in all districts and provinces at depots and stations. The office is also tasked with ensuring recognition and filling of training needs and gaps in the workforce with regards to OHS. The Risk Management Department works to ensure that ZETDC minimises risks and impacts which may have loss implications on the organisation which may include those associated with the OHS. Thus it works in liaison with the Health Office to reduce any possibility of OHS related losses, and in the process ensuring a more robust OHS system.

Various programs and activities are carried out at in ZETDC to ensure the achievement of the objectives of OHS. These activities include but not limited to: Safety Pledge, Culture Change, Risk Management Awards, Safety and Health Committee, Safety and Health Seminars and Workshops, Corporate Level Reports, Safety Circulars, Safety Awareness Campaigns and the Annual Commemoration of the World Safety Day. The various activities and programmes have either a direct and or indirect relationship with the upholding of OHS. For example, the safety pledge, safety health committees, seminars safety circulars and safety awareness campaign have a direct relationship with OHS operationalisation. On the other end the rest of the activities and programs have an indirect relationship to OHS such as the corporate level reports whose main focus is on other organisational issues.

The ZETDC's effectiveness has been evaluated on its effectiveness by a trend analysis of the noted number of deaths and injuries which are workplace related. It has been noted that whilst a consistent reporting structure has not been maintained from the year 2009 to 2016, there has been significant efforts towards ensuring that it's made robust and comprehensive. Among some of the reasons which have affected the reporting structures include the post 2000 economic crisis which led to faulty company operations and brain drain as well as under-reporting to try and scoop Risk Management Awards.

5.2 RECOMMENDATIONS

5.2.1 Occupational Health and Safety Departmentalisation

The absence of a comprehensive health and safety personnel pool in ZETDC has the opportunity cost of effective and efficient delivery of OHS. Such ineffectiveness and efficiency is noted in the lack of such OHS personnel across the geographically dispersed workstations of ZETDC which leads to traveling costs of the few personnel and inability to meet OHS

obligations. To address this challenge it is paramount that the Health Office is expanded into a department so as to ensure that there is adequate staff to take up the cumbersome and demanding requirements of OHS in ZETDC. Such departmentalisation would ensure that the health officers can spend more time in the field coordinating activities rather than being responsible for OHS administrative responsibilities.

5.2.2 Independent Budgetary Function

There ought to be an independent budgetary allocation for the OHS activities outside of the Human Resources Department. The work specialisation of the proposed department of OHS requires an independent budgetary allocation which would enable for OHS specific financial planning. Such an establishment will ensure that there is an independent financial function in which the Director of OHS resides over defending OHS spending. This will also ensure that there is reduced bureaucratic tape in the attainment of approval to spend on other non-budget planned expenditures such as emergency cases. Therefore, there is need for an independent budgetary allocation towards OHS to the OHS Department.

5.2.3 Promotion to Management of Trade Union Executive Members and ZETDC Foremen

Whilst every worker in ZETDC is privileged by the Industrial Relations Act to be part of a trade union regardless of their position in the organisation, it is detrimental for one to hold both a foreman's position as well as an executive post in a trade union. To counter this problem it is imperative to any foreman to a managerial level if they are to hold an executive post in a trade union so that they will have no responsibility over the direct work at station level of work. This would therefore ensure objectivity as such a foreman will not serve two principal goals between ZETDC OHS and the trade union.

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Government of Zimbabwe. Labour Act 28:01. Government Publications

APPENDICES

Appendix A: Interview Guide

Position of Respondent.....

Department.....

Date.....

My name is Maumbe Gerald, MSc Public Administration student at the University of Zimbabwe. I am conducting research on the Occupational Health System, the case study of ZETDC. The information collected will be used as a basis for analysing the operation of Occupational Health System. This information is solely for academic purposes, and will be treated with confidentiality.

1. Basics of the Occupational Health and Safety system in ZETDC.
2. Frameworks used in the implementation of the OHS system in ZETDC.
3. Programs and activities that ZETDC undertakes to uphold the OHS system.
4. The effectiveness of ZETDC's OHS system in the reduction of work related injuries and fatalities over the years.
5. Challenges encountered by ZETDC in the operationalisation of OHS system.
6. Recommendations to ensure for greater effectiveness and efficiency in the upholding of Occupational Health and Safety.