

MIDLANDS STATE UNIVERSITY



FACULTY OF COMMERCE DEPARTMENT OF ACCOUNTING

**An investigation of the safety, health and environment (SHE) cost structures
A Case of Windmill Pvt Ltd
By**

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*This dissertation is submitted in partial fulfilment of the requirements of the
Bachelor of Commerce (Honors) Degree in Accounting in the Department of
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DEDICATION

This dissertation is dedicated to my father who has been a source of inspiration and to my late mother.

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Apart from the efforts of myself, the success of this project depends largely on the encouragement and guidelines of others. I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this project. Without their encouragement and guidance, this project would not have materialised.

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ABSTRACT

This project aimed at investigating the safety, health and environmental (SHE) cost structures at Windmill Pvt Ltd. The problem of increased SHE costs at Windmill Ltd was the main thrust which prompted the need for the research. The research was done using both primary and secondary data sources, using the questionnaires and interviews as the research instruments. The questionnaires used for gathering data were administered by the researcher, achieving a total response rate of to 90%. Interview response rate was 100%. The researcher used a population sample of forty (40) using the stratified random sampling technique. Recommendations made from this research are that although more benefits are accrued fro SHE programs, manufacturing companies are facing various challenges in implementing these programs. From the research findings the researcher recommended that there should be segregation in respect of the level of authorisation of SHE expenditures as a control measure to ensure minimisation of the risk of misappropriation of funds and manipulation of data. The management should be committed to the pre-evaluation and pre-assessment of SHE programs before implementation to be cost effective and for cost justification. For the sake of strengthening the reliability and the validity of the results revealed before, the study could be simulated in other sectors of business.

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List of Acronyms

CBA- Cost Benefit Analysis

EPA- Environmental Protection Agency

ISO-International Standard Organization

ILO- International Labour Organisation

LTI- Lost Time Injuries

NOSA-National Occupational Safety Association

OSHAS-Occupational Safety Health Assessment Series

ROI-Return On Investment

SHE-Safety Health and Environment

SHEMS-Safety Health and Environmental Management Systems

WHO- World Health Organisation

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter presents the background of the study, the statement of the problem and the main research problem. It goes on to outline the sub research questions, research objectives, significance of the study, limitations, delimitation of the study, assumptions, abbreviations and summary.

1.1 Background of study

Windmill Ltd is a privately owned company which until 1970 was a wholly owned subsidiary of Windmill Holland, a company that dates back to the 1920s. The Zimbabwe Company was originally set up in 1947 though production of granulated fertilizer began in earnest in 1960 using a dry mixing and steam granulation process whereby imported powdered raw materials were mixed and granulated into a variety of compound fertilisers for the local market. Windmill pvt ltd is the leading manufacturer of granulated, blended and special fertilisers, agro-chemicals as well as animal health stockfeeds.

Windmill Ltd, having discovered that the establishment and maintenance of a good corporate image depends upon every single employee having a strong sense of belonging to the organization and behaving appropriately, it committed itself safeguarding the health and safety of its employees, assets, the environment, customers, neighbours and its reputation. Henceforth a thrust to embark on a formalized safety and health system (SHE) and the organization is guided by the SHE policy.

Since the launch of the safety and health system (SHE) and the safety health and environmental management system (SHEMS) in 2009, the company has been incurring increased costs through training the employees, different comprehensive strategies, interventions and awareness programmes. The costs incurred in 2009, 2010,2011,2012,2013 were \$375 000, \$425 000, \$450 000, \$470 000 and \$500 000 respectively on average.

The costs associated with these programmes have been increasing since their launch. In order to present SHE programmes as cost effective solutions and appropriate investments, SHE

officers have provided some statistical evidence. According to the SHE data base for the year 2006 to 2009, a physical verification on property damage and lost time injuries (LTI) was conducted to ascertain 2009 performance. The year 2009 proved to be a year of safety excellence with the production division achieving close to 16 million lost time free man hours (equivalent to \$192 million). A total of 30 LTI accidents were recorded in 2008 compared to 4 lost time cases in 2009 and this analysis showed an accident reduction rate by 90% to date. The statistics were made to justify expenditures and investments in SHE. The statistical data representing the costs of SHE programs from the year 2010 to 2013.

Table 1.1 Rounded off SHE related costs versus revenue from year 2010 to 2013

Year	Revenue from sale fertilisers	Safety (SHE) related costs	Other Operational costs	Profit
2010	\$175 million	\$6 million	\$125.7 million	\$43.3 million
2011	\$184 million	\$7.5 million	\$128 million	\$48.5 million
2012	\$160 million	\$10 million	\$119 million	\$31 million
2013	\$152 million	\$11.5 million	\$115.5 million	\$25 million

Adapted from 2013-Windmill (pvt) (ltd) performance report

SHE costs have been increasing since the year 2010 upto date, as clearly shown in table 1.1 above. Revenue decreased since the year 2011 as SHE costs were increasing. In 2012, revenue decreased by \$24 million, SHE costs increased by \$2.5million.Operational costs decreased by \$9 million as profits decline by \$17.5 million. In 2013 revenue decreased by \$8million at the same time SHE costs increased by \$1.5 million, operational costs decreased and profit is decreasing as well, as the years progresses.

The management is concerned about the relationship between revenue and SHE costs, yet the SHE officers are of the opinion that so much benefits are accruing from these programs.

According to the minutes of the meeting held on the 25th of October 2013, the management associates diminishing returns with safety and health investments. The Financial Director is concerned that the company is spending excessively on SHE projects and programs rather than its core business. The finance director is of the view that they should cut down such expenditures or else the company is viewed as non-competitive. She then calls for the

justification of these SHE expenditures and investments from the SHE manager, rather a demonstration of the quantifiable financial return from the investments.

1.2 Statement of the problem

Safety health and environment programs have been implemented with a view of creating a safe and healthy environment oriented to realization of company goals and objectives. SHE costs has been increasing at Windmill adversely affecting the profits perceived to be derived from the company's performance. Costs from SHE audits increased due to a continuous implementation of SHE programs. Windmill Ltd board responsible for governance is of the opinion that zero accidents are achieved through the continuous implementation of safety and health programs. This seemingly adverse relationship of costs and benefits associated with safety health and environment persuaded the research to be undertaken.

1.3 Main research question

An investigation of the cost structures at Windmill Pvt Ltd.

1.4 Sub research questions

- ❖ What is the SHE policy at Windmill Ltd?
- ❖ What are the SHE policy implementation guidelines?
- ❖ Is there adequate personnel to implement the SHE policy?
- ❖ What implementation challenges are being faced by Windmill Ltd?
- ❖ What controls have been put in place to ensure compliance with the SHE policy?
- ❖ What would be the best SHE policy for Windmill Ltd?

1.5 Research objectives

- ❖ To establish the SHE policy for Windmill Ltd.
- ❖ To establish the existence of SHE policy implementation guidelines.
- ❖ To assess the adequacy of personnel to implement the SHE policy.
- ❖ To assess the implementation challenges faced by Windmill Ltd.
- ❖ To assess controls put in place to ensure compliance of the SHE policy.
- ❖ To recommend the best SHE policy for Windmill Ltd.

1.6 Significance of Research

To the researcher

The study is prepared in partial fulfilment of the Bachelor of Commerce Accounting Honours Degree at Midlands State University. The research also allows the researcher to gain relevant knowledge and greater appreciation of the importance of SHE in an organisation.

To Windmill Ltd

Recommendations from the research may be considered for adoption by Windmill Ltd.

To Midlands State University

The research will serve as a future reference point for other academics who anticipate carrying out research on the subject.

1.7 Delimitations

The study focused on Windmill Pvt Ltd financial operations surrounding the SHE activities from the year 2010 to 2013. It will centre on Head office for Windmill Ltd in Westgate, Harare.

1.8 Limitations

The researcher faced challenges in accessing adequate data from the company since it is a private company (Windmill pvt ltd) and some information is regarded as confidential. However the researcher gave them the assurance that she would preserve the confidentiality of the information and use the information for academic purposes only.

Expenses such as typing, printing, communication and travelling limited some of the aspects that could have been studied since the researcher faced financial problems. Therefore, the researcher had to make use of emails.

1.9 Assumptions

This research has been conducted basing on the assumption that current legislation mandates these safety programs which will remain in place during the research period. It is also assumed in this research that the respondents provide accurate and relevant information.

1.10 Abbreviations

SHE-Safety Health and Environment

LTI- Lost Time Injuries

.ISO-International Standard Organization

SHEMS-Safety Health and Environmental Management Systems

ROI-Return On Investment

OSHAS-Occupational Safety Health Assessment Series

CBA- Cost Benefit Analysis

NOSA-National Occupational Safety Association

EPA- Environmental Protection Agency

WHO- World Health Organisation

ILO- International Labour Organisation

1.11 Summary

This chapter covered the background of the problem, statement of the problem, main research question, sub research questions and research objectives. Delimitation, limitations and assumptions of the study, abbreviations and summary were also discussed in this chapter. Chapter two reviews the related literature.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter explores all the literature review with regard to safety health and environmental management. It presents the definition for SHE policy, the SHE policy implementation guidelines, the adequacy of personnel to implement the SHE policy, the implementation challenges faced, controls put in place to ensure compliance of the SHE policy and a recommendation for the best SHE policy.

2.1 Definition for SHE policy

According to www.ehow.com (11.08.14), a health and safety policy is a workplace guideline meant to protect the well being of employees and customers. The (Business Dictionary 2014) defined the safety policy as organised efforts and procedures for identifying workplace hazards and reducing accidents and exposure to harmful situations and exposures. It went on to mention that it includes the training of personnel in accident prevention, accident response, emergence preparedness and use of protective clothing and equipment.

The revised definition by the International Labour Organisation (ILO) in agreement with the World Health Organisation (WHO) committee (1995) of occupational health and safety 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.

(Guidotti 2011, 5) also argued that, it involves the protection of workers in their employment from risks resulting from those factors that are adverse to health, the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities. To be more precise, the adaptation of work to man and of each man to his job.

According to the Roche Group (2007) SHE policy, safety health and environmental matters are seen as a responsibility and just as methodically as the issues concerned with cost efficiency, productivity and quality. It also makes clear that the concerns for SHE protection are an inseparable part of every activity.

The Victorian Workcover Authority (2001:11) linked the SHE policy and SHE program hence referred them as administrative measures put in place to control workplace hazards and should be used to eliminate or reduce the risk associated with workplace illness or injury. In

agreement with the view, the Government of South Australia (2012) highlighted that a SHE policy includes the management's intention to provide a healthy and safe working environment and makes clear the safety goals of a workplace. For the sake of compliance, a SHE policy should reveal management's acknowledgement of their legal duties and their intentions.

According to the European Council of Nice (2000), the Commissions communication extended the concept of health and safety and highlighted that, it should encompass a global approach to well being at work, addressing new risks and taking into account the changing labour market, considering female employment, elderly workers, typical workers, active ageing, etc.

Barrick's Safety and Health Policy (www.barrick.com) (13.08.14), outlines the company's commitment to a zero incident work environment with a safety culture based on teamwork and safety leadership. It reflects the Barrick safety vision, which is "Every person going home safe and healthy every day."

2.1.1 Safety Laws in Zimbabwe

According to the NewsDay 14 January 2014, NSSA offered assistance on the occupational safety and health and mentioned the laws that every employer in Zimbabwe is obliged to comply with. The laws mentioned are:

Factories and Works act (Chapter 14:08)

This act provides for the registration and control of factories, the regulation of work in factories, use of machinery supervision, precautions against accidents to people employed on structural work and for the matters incidental to the foregoing.

Pneumoconiosis Act (Chapter 15:08)

The act provides for the administration and control of persons employed in dusty occupations and providing for matters connected with the foregoing.

Radiation Protection Act (Chapter 15:15)

The act aims at establishing a radiation protection authority and to confer powers and functions on such authority in relation to protect the public and the workers from the dangers

resulting from abuse of equipment, devices or materials capable of producing ionizing radiation and any matters incidental to the foregoing.

Environmental Management Act (Chapter 20:27)

The act provides for the sustainable management of natural resources, environmental protection, the prevention of pollution and environmental degradation, the preparation of the National environmental plan and other plans for the management. It also provide for the protection of the environment, the establishment of the Environmental Management Agency (EMA) and an Environmental Fund, to amend references to intensive conservation areas and committees and associated matters in various acts. It repeal the Natural Resources Act (Chapter 20:13), the Atmospheric Prevention Act (Chapter 20:03), the Hazardous Substance Articles Act (Chapter 15:05) and the Noxious Weeds Act (Chapter 19:07).

Mining (Management and Safety) Regulations S.I. 109 of 1990

It provides for the management safety of mining workers.

Social Security (Accident Prevention and Workers' Compensation Scheme) Regulations S.I. 68 of 1990

The section provides for the prevention of accidents at workplace and the Workers Compensation Scheme.

In this article, NSSA also cited that Zimbabwe as a nation adopted the OHSAS 18001 standard for occupational safety and health management and the ISO 14001 standard for environmental management and any other OHS system must be in addition to these not to replace it.

OSHAS 18001

The standard contains the health and safety procedures, risk assessment forms and instructions, requisite forms, codes of practice, health and safety policies, employee guides, hazard tables, etc. (www.ohsas-18001) (21.08.14).

ISO 14001

The standard makes specifications on the requirements of an environmental management system to try and enable organizations to develop policies and objectives which take into account legal requirements and information about environmental aspects.

2.2 SHE policy implementation guidelines

In an attempt to provide a reasonable argument on the SHE policy implementation guidelines, www.bizfilings.com (11.08.14) postulated that there some things to take into consideration when implementing the safety program which are as follows:

Have an insurance plan – The organisation will need an insurance plan. Beyond the liability protection the organisation receives, there isn't much to expect from insurers. Their goals are different from any other organisations; hence they may not have the expertise to provide some services needed concerning training, engineering services, industrial hygiene, noise surveys, etc.

Promote a safe working place – The best claim is the one that never happened. It should be a primary policy for each employer to avoid accidents. They can do this by ensuring that employees use safety equipment, restructuring job tasks and duties in a more ergonomically efficient way.

Match an employee's physical capabilities to the physical demands of the job – Employers should avoid placing employees in situations they are physically incapable of handling. Job titles and descriptions should be reduced to writing and incorporated into an organisation's policy handbook or operating procedures.

The site went on to provide a list of procedures to be followed to make sure the policy is implemented and applied. The list is as below:

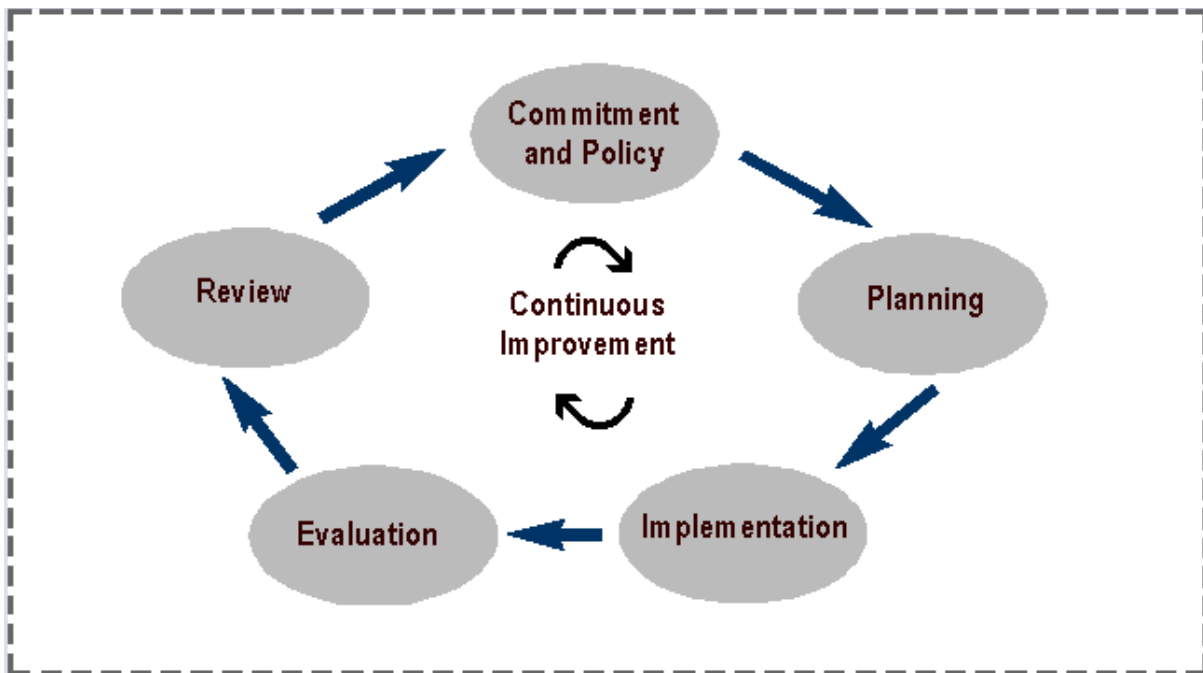
- ❖ Employees should sign a document stating that they have read, understood, and agree to follow the company policy.
- ❖ The signed document should be retained in the employee's personnel file.
- ❖ New employees should sign prior to actual work.
- ❖ New sign-offs should be secured as the policy may be updated.
- ❖ Safety training should be provided for supervisors and employees.

- ❖ Safety bulletins and other communications should be distributed as information changes.
- ❖ Discipline should be consistently applied across all individuals in similar circumstances.
- ❖ Supervisors should be fully knowledgeable of the impact of their actions, given special attention to sole reliance on verbal instructions for safety directions.
- ❖ Supervisors should perform independent inspections and follow up inspections to ensure the work areas and employees are conforming to safety rules.

Devra Gartenstein at www.ehow.com (13.08.14) argued that for an effective implementation of the policy, there is need to prepare a written document detailing the policies and procedures, the organisation wish to implement including the purpose and objectives they intend to accomplish. The author went to emphasize the issue of holding meetings at which staff is introduced to the policies and procedures and even proceed to hold small meetings among different departments explaining why such policies are implemented and their benefits at both the company and individual level. There is also need to schedule assessments at regular intervals.

Origin's HSE Management System is based on the continual improvement methodology of 'Commit-Plan-Implement-Evaluate and Review'. The elements of the continual improvement loop are executed through a set of standards which interpret, support and provide further details to the requirements of the HSE Policy. (www.ccfе.ac.uk) (13.08.14).

Fig 2.1: The Continual Improvement Cycle



Source: ISO 14001 standard (1996).

The stages as defined by ISO 14001 standard:

Commitment and Policy

The management commits to safety and environmental improvement and establishes a company SHE policy. The policy is the foundation of the Safety Health and Environmental Management System (SHEMS).

Planning

An organisation has to first identify the environmental aspects of its operations such as pollutants or hazardous waste that can have negative impact on people or the environment. Once the significant environmental aspects are determined, the organisation sets targets and objectives. The last part on the planning stage is to devise an action plan for achieving the set goals and targets.

Implementation

The organisation now follows the action plan using the necessary human or financial services. Key component is employee training and awareness and other stages that include documentation, following operating procedures and setting up internal and external communication lines.

Evaluation

Operations are monitored and evaluated to see whether targets are being met. This involves internal audits, analysis of incidents, evaluation of legal compliance, etc. If not, the organisation takes corrective action.

Review

The results of the evaluation are reviewed by the top management to see if the SHEMS is working and they determine whether the environmental policy is consistent with the organisational values. The plan is then revised to optimize the effectiveness of SHEMS. This stage creates a loop of continuous improvement for the organisation.

In addition, Berkeley, L, (2014) viewed and explained implementation in a different perspective from other scholars. He argues that the implementation takes place at multiple organisational levels including the institutional level, division or facility level, at activity level and at individual level. He said that there should be clarity of missions, establishment of the SHE policy, setting of objectives and expectations, selection of tailored SHE standards, generate and authorize use of the SHE manual and assess the overall system.

2.3 Adequacy of personnel to implement the SHE policy.

According to the Health and Safety of Great Britain, (2012), the responsibility for and obligation to the SHE management system rests on everyone in the organisation. It states that, there is need for team work in order to achieve better performance in safety and health practises. To achieve exceptional safety health and environmental performance, there is need for everyone's commitment and involvement. For that to become a reality there is need for each employee to understand their roles and execute them accordingly. In supporting this view, Bannet (2002), went on to say that the responsibility of securing health and safety in every social setting rests in the hands of the workers.

According to www.tenders.hpd.co (13.08.14), to co- ordinate the implementation of the SHE policy, a contractor as a minimum requirement shall designate or deploy upto 250 workers, one safety supervisor, above 250 and upto 500 workers the contractor shall deploy one qualified and experienced safety engineer or officer and above 500 workers, one additional safety engineer or officer.

In agreement with the www.tenders.hpd.co , the (South African Occupational Health and Safety act) (1993) highlighted that, the adequacy of personnel for the SHE policy implementation depends on the nature of activity or business carried by the employer. The act went on to cite an example of shops and offices where one representative for every 100 employees is recommended and for those in the mining, agriculture or manufacturing industry should be one representative for every 50 or less employees.

The National Occupational Safety Association (NOSA) (1992) argues that, to co-ordinate safety and environmental upkeep in all areas of operation, SHE committees should be established. The committees constitute of safety representatives, union and management representatives and a fair representation of all sections or departments in accordance with the NOSA requirements. The association went on to recommend that, a committee referred to as the Executive SHE committee be established to oversee, co-ordinate the implementation of the SHE programme and the upkeep of standard procedures in all areas of operation as required by NOSA element 5.13.

In addition, the US Department of Interior Safety and Health Community (2008:12) postulated that, it is the responsibility of the management to assemble and maintain adequate personnel resources for occupational safety and health workplace and personnel should have the relevant skills to fulfil assigned tasks. Most importantly the SHE staff needs to be supplemented with temporary resources such as insurers, consultants, industrial hygienic specialists, etc.

2.4 SHE policy implementation challenges

Implementation being a process of turning a policy into practise, it is common however, to observe a gap between what was planned and what actually happens. (Buse et al, 2005) in their view of policy implementation named three approaches, and each has problems associated with it. There is the top-bottom approach, the bottom-up approach and the principal theory.

They went on to cite the problems associated with each approach. With top-bottom there is a problem of a policy changing during implementation, difficulties in applying where no single, dominant policy or agents is involved and it is very unlikely that all pre-conditions would be present at the same time. On bottom-top, the evaluation of the effects of the policy becomes difficult and also difficulties in separating the influence of individuals and different levels of management on policy decisions and consequences, so as the principal theory.

According to the MetricStream solution at www.metricstream.com (14.08.14), there are challenges on the implementation of the SHE policy and are grouped as below:

Monitoring compliance with SHE regulations- with this dynamic world, organizations are growing larger and more globalized with a vast chain of suppliers who, in turn, have their own suppliers. In this complex, SHE practises are becoming increasingly difficult to manage, and monitor. Sometimes, a safety incident or environmental hazard may be traced back to a supplier. But almost always, the organization who hired the supplier is held responsible, and stands to lose the most.

Reduction of reputational risk- Due to this fiercely competitive and highly connected world, brand and reputation has become the backbone of most organisations. Organisations that demonstrate not a strong commitment to employee safety and environmental sustainability can easily lose the hard earned trust of investors, stakeholders and customers.

Management of industry dynamics- Fast moving product life cycles, demand variations, change of suppliers and other factors have caused organisations to be in a state of flux. Managing such changes is hard enough but managing SHE across these changes is even harder. For example, when product specifications change, an organization has to ensure that the raw materials are sourced from a proper supplier, that they are not harmful to employees working on them, and that they comply with various SHE regulations. Performing such activities every time a product specification changes is not only time consuming, but also complex and resource-intensive.

Coping with a changing regulatory environment- Regulators such as the Environmental Protection Agency (EPA) update their regulatory requirements. Organizations that struggle to comply with the hundreds of existing regulations from various federal, state, and local agencies, find it extremely difficult to keep track of changes.

In trying to create an argument, Powell and his colleagues identified multiple factors that undermine the implementation of safety on workplaces. These factors include lack of agreement that improvement was necessary, lack of clarity on how SHE fits with related and existing services, poor fit with organisational priorities, lack of direct and indirect resources to support the SHE program, etc. (Powell, etal 2009).

Julia Corbett at www.carehome.co.uk ,(22.08.14) postulated that, the greatest challenge or difficulty faced during the implementation of health and safety policies is that of employee

attitudes. The scholar went on to say that, according to the research conducted by the National Association for Safety and Health in Care Services (NASHiCS), eighty percent of the professionals find safety and health policy confusing and lacking clarity, hence a management concern.

In another note, Gunn in (Hunter, 2003), cited common barriers to effective health policy implementation. He highlighted that challenges may involve lack of adequate time and resources, the policy to be implemented may not be based on a valid theory of cause and effect, imperfect communication and co-ordination, poor understanding of and disagreement on objectives, tasks not fully specified in correct sequence, to mention just a few.

2.5 Controls to ensure compliance with the SHE policy.

Health and safety policies must be clearly posted or otherwise available to employees. Employees must be provided with any additional safety-related training required for certain jobs. Employers must monitor the effectiveness of their policies and make necessary adjustments. (www.ehow.com), (13.08.14).

According to the MetricStream solution at www.metricstream.com (14.08.14), there is an Environmental, Health and Safety (EHS) solution provided, where they cited the controls that can be put in place to ensure compliance of the SHE policy. The controls include, a common database for hazardous material safety information such as melting point, boiling point, toxicity, health effects, storage and disposal, first aid, and spill handling procedures, capabilities to label substances on the basis of chemical, health, or environmental risks, configurable catalogues on chemicals, chemical compounds, and chemical mixtures, etc.

The Indian Government (Ministry of Labour and Employment) cited some of the controls that an organisation can put in place in trying to ensure compliance of the SHE policy. These include the provision of adequate penalties for the violation of laws in force, providing facilitation of adoption for the best SHE practises, establishing audit mechanisms to test and authenticate SHE management systems, to mention but a few

Columbia, J, in the article, *Guidance Notes on tools for pollution management*, took it from a different point of view and cited two cases, the Brazilian case and the Chinese case.

Brazilian case

A large Brazilian construction company significantly reduced the number of accidents and fatalities by developing a rigorous occupational health and safety program. It referred the controls as the key elements of the program. Cited in the case are controls to ensure policy compliance which include a rigorous and focused SHE training for managers, supervisors and every employee, constant worker SHE induction, monetary rewards to the entire team including project managers and employees and a detailed workers toolkit identifying all job related risks, typical accident causes and clear ways to prevent them.

Chinese case

To motivate employees to work safely, a Chinese chemical company decided that, it would ask each employee to bring a family picture to work in order to create a family bulletin board for each work area. The board was located in the room where, each morning, the workers had a five-minute safety talk and pledged to their families to have a safe workday. After introducing these practices, management noticed that workers began talking about safety among themselves, and management credits these innovations as contributing to a reduced accident rate.

In support of this view, Steve Cowley at www.ccfе.ac.uk/she (13.08.14) (United Kingdom Atomic Energy Authority policy) highlighted some of the controls to be put in place to ensure compliance of the SHE policy. It is indicated as the core principles and explained as below.

- ❖ Developing a culturally related program of praising safe and environmentally work worth of and constructively challenge unsafe or environmentally damaging work wherever they occur.
- ❖ Setting SHE objectives and targets for performance appraisal and for motivation purposes, report the performance openly.
- ❖ Regarding compliance with safety legal requirements and other obligations as a priority, adopting safety practices across all our activities which comply with the law.
- ❖ Keeping under surveillance SHE systems to ensure that everything concerned with the system is appropriate, challenging and complied with.

- ❖ Employees are supposed to undertake work which they are trained and capable to do and ensure that adequate resources are available for the fulfilment of SHE responsibilities.

In addition, according to the Ensign Energy Services Inc, Health, Safety and Environmental System (2007), postulated some of the controls that any organisation can adopt. These include holding personnel accountable for completing tasks according to plans and HSE performance standards, develop and use systematic monitoring systems for both proactive and reactive performance measures to measure and support HSE objectives, determine non-compliance and the opportunity for practicable improvement against performance measures, etc.

The compliance officer shall have authority to establish procedures, investigate complaints and incidents, and audit performance, require cessation of any activities that may pose an imminent hazard to persons, property or the environment, commit financial and staff resources to ensure continued compliance with applicable environmental health and safety regulations and establish mechanisms (e.g. local safety committees, lab safety officers, facility manager networks) to implement and monitor compliance requirements (Harvard University SHE policy).

In support of the other scholars, the (CFI Industries SHE policy) clearly states that anyone who violates the SHE policy or the safety, health and environment laws may be subject to discipline by the company, upto or including termination of employment.

In addition to what other scholars said, Wanda Thibodeaux at www.ehow.com (14.08.14) mentions some of the controls which include, creating a clear set of disciplinary actions such as suspension or docked pay for managers who do not follow given policies and procedures. Conducting meetings concerning the regulations and providing each manager with a copy. Employees may be more likely to conform to policies and procedures when they know possible punishments to expect.

Another control cited is that of conducting a business analysis with the managers to determine exactly what is needed in order to enforce the policies and procedures. It is possible that some non-compliance may not be due to unwillingness but lack of resources. Device a cooperative plan with the managers and HR/accounting practitioners to allocate and

establish funds and plans for obtaining the necessary resources. There is also need to conduct monthly or bi-monthly reviews of each manager. Identify the policies and procedures which the manager has not complied with and establish clearly defined goals for meeting compliance in the future. Managers have to be realistic in how much they can accomplish or change in these goals since modifications probably won't take hold overnight.

Lastly the site mentioned about instructing HR to develop a system by which the manager's employees may report infractions of the policies and procedures. This helps the manager in identifying employees who need discipline that is if he cannot monitor every employee consistently. Develop a similar system for reporting excellent compliance so the manager has a way to reward compliant employees.

2.6 Best SHE policy

SHE policies differ from one organization to another, depending with each organisation's nature of operations. Organizations develop SHE policies from their objectives. An environmental policy includes commitments to employee consultation and training, assessment of activities and product related environmental impacts to identify targets for continuous improvement and legal compliance and due consideration of the stake holder environment requirements. (www.csr.com).

Compliance with the OSHAS 18001, ISO 14001 and other framework or requirements makes the best SHE policy, clearly stating the organisation's goals and targets, identifying hazards that each employee may be vulnerable to during work and seek to address them in the SHE policy.

Dryzek and Schlosberg (2005) argued that, for a best SHE policy to be achieved, the right to participate as equal partners at every decision making level should be established.

www.ghd.com (17.08.14) cited and gave an example of a SHE policy recently awarded as the best. The policy is as below: (GHD GROUP)

The health and safety of people, clients, visitors and business partners are key priorities, as are the identification and management of potential environmental impacts. The company seeks to create an outlook and culture in which HSE principles are part of everyday business. Everyone is committed to minimising the risk of injury and ill health, to minimising our impact on the environment in order to achieve leading industry practice and to preventing

pollution. With these goals in mind, the effective delivery of services will be achieved through the development, implementation and ongoing review of a robust health, safety and environment (HSE) management system, comprising of setting SMART (Specific, Measurable, Attainable, Realistic, Time bound) objectives and targets that promote a strong SHE culture and encourage employees to work towards the targets within a given space of time. Some are explained below:

Defined responsibilities- Employee responsibilities should be clearly defined including those that work on behalf of the organisation as subcontractors and sub consultants to reduce the risk of duplication of tasks, wasting of resources and conflicts amongst the workers.

Consultative mechanisms and proactive communication- To encourage participation and improve understanding of safety and health issues, consultative mechanisms such as Exit, Entrance, Fire, No unauthorised staff, etc, and proactive communication should reach everyone throughout the organisation.

Risk management processes- The SHE policy should contain risk management processes that exceed minimum compliance with relevant legal and non statutory requirements.

Safety in design principles that encompass the full project lifecycle- To avoid accidents at work, employees or contractors must be provided with principles or procedures of how their work should be done.

HSE training- SHE officers or the management should ensure that they provide adequate training to every employee to enable them to safely undertake their work activities and ensure environmental impacts are managed properly.

Incident management and injury rehabilitation- To achieve the best SHE policy, it should contain how an organisation is going to manage incidents at work and in case of an injury, how they are going to restore to the former condition.

Monitoring and reporting performance against SHE indicators- SHE indicators should be consistently observed and make a record where possible for the sake of reporting performance.

Internal review for continual improvement- The processes of planning, implementation, evaluation should be periodically reviewed internally for continual improvement.

The organisation seeks the cooperation of every member in satisfying their duty to health and safety, and the management of environmental impacts. There is commitment to the implementation of continual improvement strategies and allocating resources in the drive towards risk minimisation and lasting SHE benefits to stakeholders.

Lastly there is need for the policy to be authorised by at least two signatories, either the Chief Executive Officer or the Chairman of the board or any equivalent.

2.7 Summary

This chapter focused on related literature over the definition of SHE policy, its implementation guidelines, assessment of the adequacy of personnel to implement the policy, the controls in place to ensure policy compliance and the best SHE policy that can be adopted. The following chapter looks at the research methods to be used in obtaining data relevant to the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter focuses on methods used by the researcher to analyze research data. It highlights the research instruments used in the data collection and the justification for the use of such instruments. The components which are of greater importance discussed in this chapter are the research design, research population, research instruments, the sampling techniques, data sources, data presentation and analysis and the summary of the chapter.

3.1 Research Design

A research design is a detailed outline of how an investigation will take place. It includes the methods for data collection, the instruments to be used, how the instruments will be employed and the intended means for analysing data collected. (Business Dictionary 2014). According to Bhattacharjee, A, (2012), a research design was defined as a blueprint for an empirical research project aimed at answering research questions. A research design is the glue that holds the elements of the research together. Kothari, C,R, (1990:31) postulated that, “A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure”. He went on to say that, the design includes an overview of what the researcher will do from writing the research and its implications to the final analysis of data. There is the descriptive and the explanatory research designs. The researcher came up with a research design that aims to provide relevance to the research and that was specifically in line with the purpose and objectives of the research. To avoid duplications, the researcher followed the skeletal routine of the research design.

3.1.1 Explanatory Research Design

According to <http://lynn-library.libguides.com> (31.08.14) an explanatory design is conducted about a research problem when there are no or a few studies to refer to. It focuses on gaining familiarity and insights for later investigation or is undertaken when problems are at preliminary stage of investigation. It generates new ideas and determines whether a study is feasible in the future.

3.1.1.1 Merits of an Explanatory Research Design

An explanatory research design is flexible and can address research questions of why, what and how and it helps in establishing research priorities, that is what to consider most important. This design also provides an opportunity to define new terms and clarifying existing concepts and is often used to develop more precise research problems.

3.1.1.2 Demerits of an Explanatory Research Design

<http://lynn-library.libguides.com> (31.08.14) states that an explanatory research design generally utilises small sample size and this is evidence that findings are typically not generalized to the population at large, hence gives bias results. The explanatory nature of the research inhibits an ability to make definite conclusions about the findings. Moreover the research process underpinning explanatory studies is flexible but it is often unstructured, leading to only tentative results that have limited value in decisions made.

3.1.2 Descriptive Research Design

To make enough provision for protection from bias and to maximise reliability, the research made use of the descriptive research design. According to the University of Bradford, School of Management, a descriptive research design is used to identify and classify the elements or characteristics of the subject, for example, the number of Lost Time Injuries (LTI). A descriptive design can either be quantitative or qualitative. (<http://learn.gen.org/>) (25.08.14). It involves the collection of information in numerical form, for example, the frequency of SHE training programs. The main objective of descriptive research design is describing the state of affairs as it prevails at the time of study and the researcher has no control over the variables, he/she has to report what has actually happened. (Kothari 1988).

3.1.2.1 Merits of Descriptive Research Design

Janine Murphy at <http://classroom.synonym.com> (31.08.14) stated that data collection techniques present or provide a multifaceted approach for data collection, for example, a survey can provide statistics about an event which also illustrates how people experienced that event. It continues to say that, this method offers unique means of data collection. An observational technique can often remove the barriers of strict academic approaches as the researcher witnesses how others experienced an event.

3.1.2.2 Demerits of Descriptive Research Design

Confidentiality is regarded as the primary weakness of descriptive research. Often subjects may not be truthfully presented as respondents may feel they need to tell the researcher what they think the researcher wants to hear, hence biased results. Respondents may refuse to provide answers to questions they view to be too personal and the idea that someone is watching can turn an observation into an event where people are acting how they perceive they should act. The method also presents the possibility for errors and subjectivity since the questions on the questionnaire are predetermined. (<http://classroom.synonym.com>) (31.08.14)

Justification of choice

The researcher used the descriptive research design because it is both quantitative and qualitative, hence produced a reliable research evidenced by statistical data and individually targeted investigations. The research method helped in the identification of the targeted population, defining questions since it explored the what, who, when, how and where questions.

3.2 Targeted Population

A population can be defined as all people or items with the characteristics that one wishes to study. (Bhattacharjee, 2012). According to Valerie, J and John H at www.stats.gla.ac.uk, (26.08.14), population is any entire collection of people, animals or things from which data is collected. It is the group in which the researcher wishes to describe or draw conclusions from. Concurring to the definition at www.stats.gla.ac.uk, (26.08.14), Gezu and Yigzaw (2006:40) defined a target population as that which the researcher wishes to study, sample and draw conclusions from. Population can also be defined as a group of persons, items, elements, individuals from which a sample is drawn for measurement, for example, a group of engineers, doctors, employees, etc. The researcher selected the employees as the population under study and targeted six departments at the organisation (Windmill Ltd).

3.2.1 Sampling techniques

William, T,(2002) defined sampling as the process of selecting units from a population of interest so that by studying the sample there is fair generalization of results back to the population on which the sample was chosen. A sample is a selected representative of the target population. According to Bhattacharjee, A, (2012) sampling is the statistical process of selecting a sub set (called a sample) of a population of interest for purposes of making observations and statistical inferences about that population. The researcher has to take into

account the two risks associated with sampling which are the risk of incorrect acceptance and the risk of incorrect rejection. (<http://expolorable.com>) (27.08.14). Due to feasibility and cost constraints to collect information from all employees, the researcher selected a sample size using random sampling.

3.2.2 Sample size

Kothari, (2012) defined a sample size as the number of items selected from a targeted population to constitute a sample. The size of sample should neither be excessively large, nor too small. It should be optimum. An optimum sample is one which fulfils the requirements of efficiency, representativeness, reliability and flexibility. As an acceptable confidence level for the estimate, the researcher must determine the desired precision when deciding the size of the sample. The size of population variance needs to be considered as in case of larger variance usually a bigger sample is needed as well as the size of the population. In this research a sample size of forty people was used covering the Finance department, Research and Development, Human Resources, SHE, Production and the Purchasing department. The sample is represented in Table 1 below:

Table 3.1 Population and sample size

Department	Population	Sample size	Percentage
Finance	10	7	70%
R&D	5	5	100%
Human and Resources	6	6	100%
Production	15	8	53%
Purchasing	5	5	100%
SHE	9	9	100%
Total	50	40	80%

3.2.3 Stratified Random Sampling

The researcher used the stratified random sampling of independently selecting a separate sample from each population stratum. According to www.stat.ualberta.ca (26.08.14) stratified random sampling is a technique which attempts to restrict possible samples to those which are less extreme by ensuring that all the parts of the population are represented in sample to

increase efficiency. In stratified sampling, the population is divided into sub groups called strata. From each stratum, a sample is then drawn independently from each strata. Once the groups are formed, random sampling can now be applied.

3.2.3.1 Advantages of Stratified Random Sampling

This method ensures that specific groups are represented in the sample by selecting individuals from the strata and it ensures that sufficient sample points are obtained to support a separate analysis of any subgroup. A stratified random sample requires a smaller sample which is cost effective mainly because of the greater precision it provides. Moreover, a stratified sample can identify an unrepresented sample, for example, an all-female sample from a mixed gender population. It also helps to identify representatives of a sample.

3.2.3.2 Disadvantages of Stratified Random Sampling

Stratified random sampling is more complex and require greater effort than simple random sampling since strata must be carefully defined and it can only be carried out if a complete list of population is available. In the case of human populations, to avoid potential bias in the sample, there is need to try and ensure that an adequate proportion of the sample takes part in the research. This may require re-contacting non-respondents and can be very time consuming, or reaching out to new respondents.

3.2.4 Simple Random Sampling

According to Kothari, C,R (2004), simple random sampling refers to a method of sample selection which gives each possible sample combination an equal probability of being picked up, each item in the population having an equal chance of being included in the sample. It ensures a law of statistical regularity which states that, if on an average, a sample is chosen randomly, the sample will have the same composition and characteristics as the universe.

3.2.4.1 Advantages of Simple Random Sampling

This is the simplest of all probability sampling techniques, the simplicity then being the strength of the technique. The sample is unbiased and the inferences are most generalizable amongst all probability sampling techniques simply because the sample frame is not partitioned or sub divided. (Bhattacharjee, A 2012).

3.2.4.2 Disadvantages of Simple Random Sampling

Kothari (2004) said that, this method is obviously impractical if not impossible in complex problems of sampling. Instead the practical utility of the method is very much limited.

Justification of choice

The researcher, however used the stratified random sampling in carrying out the research since it ensures that all specific groups are represented.

3.3 Data Sources

Data sources can either be primary or secondary. The nature of data, quantity, complexity, logic for returning query results plays a role in determining a data source. Peter Van Nedepelt and Piet Daas (2012:20-21) talked of the completeness attribute that a data source should have and should meet the attribute of integration. The major data collection techniques used in this research are interviews, questionnaires, observations and group discussions. Cooper and Schindler (2003:87) defined data as the facts presented from the study environment to the researcher.

3.3.1 Primary Sources

A primary source is that which the researcher collects in the field specifically for the project. (Kotler, 2003). This is the data that has been obtained from interviews, questionnaires and observations made by the researcher. According to Kellerher, W,S (1999:18) defined primary data sources as the first hand evidence left behind during observations at the time of event. Primary sources provide first hand testimony or direct evidence concerning a topic under investigation. They are created by witnesses or recorders who experienced the events or conditions being documented. Often these sources are created at the time when the events or conditions are occurring, but primary sources can also include autobiographies, memoirs, and oral histories recorded later. (<http://www.yale.edu/>) (26.08.14).

3.3.1.1 Merits of Primary sources

www.preservearticles.com (31.08.14) cited some of the merits for primary sources which includes that its degree of accuracy is high, this enhances the viability and reliability of the research and does not require extra caution. Primary sources usually include definitions of various units used in the sources.

3.3.1.2 Demerits of Primary sources

The collection of data from primary sources requires a lot of time and a lot financial resources, hence this may limit the scope of the research as the researcher may lack these two. It also require a lot of labour and skill and in some enquiries, it may not be possible to collect data. (www.preservearticles.com) (31.08.14).

3.3.2 Secondary Sources

Secondary data is defined as a systematic collection of data and its evaluation to describe, understand and explain events and actions that occurred in the past. (Wallen and Fraenkel 2006:548). According to Kumar (2003), secondary data is data collected by agencies or persons for the purposes of solving the problem at hand. They can be obtained from the internal records of the company and external sources such as EMA reports, government publications, newspapers, trade journals, books, store audits and annual reports. For the purpose of study the researcher used secondary data sources from annual reports of the company, internet articles, books, dictionaries, business journals, EMA reports and newsletters.

3.3.2.1 Merits of Secondary sources

Ghuri (2005) cited some of the merits of secondary sources, where he said that the method saves time since the process has been simplified due to the revolutionarized world. The sources generate new insights and is cost efficient on the fact that some information is obtained internally and already published books, journals and articles. Reanalyzing data can also lead to new discoveries.

3.3.2.2 Demerits of Secondary sources

These sources face a problem of inappropriateness of data. Primary data is collected with a solid idea in mind to answer a research question or to meet a specific objective, in this sense, secondary sources may provide vast amounts of information but quantity does not mean appropriateness, because it has been collected to answer research questions. (Denscombe 2007). Moreover Saunders (2009) talked of lack of control over data quality as a weakness of secondary sources. Most institutions and organizations guarantee quality data but is not always the case with secondary sources.

3.4 Research Instruments

Research instruments can be referred to as tools used to collect data from respondents. To solicit primary data, the researcher used questionnaires, face to face interview, telephone interviews, observations and an analysis of the SHE operations.

3.4.1 Questionnaires

According to Best (2001:223), a questionnaire is referred to as a list of questions sent to a number of individuals for responses and they produce standardized statistical results that can be presented in tabular form. Simply a questionnaire is a media of communication between

the researcher and the respondents. A questionnaire is a group of sequenced questions designed to extract information upon a subject.(Dictionary of Statistical terms). In this research, the researcher used questionnaires. The researcher made them available for completion to the SHE officers, management and staff from other related departments. The questionnaires were used to analyse responses since it becomes easy to tabulate the responses. Both closed and open-ended questionnaires were employed in the study where the open ended questions were used to boost respondents' participation while closed questions ensured that the respondents adhere to the problem addressed.According to Best and Khan (1993) a questionnaire is viewed as a data gathering instrument through which a person would respond to questions in writing.

3.4.1.1 Merits of questionnaires

There is greater uniformity as compared to interview, each person answers the same questions and the respondents are given reconsideration of their responses since they had all the time to go through the questionnaire. It also enhances the rapidness of data collection.

3.4.1.2 Demerits of questionnaires

Questionnaires have a weakness of eliminating illiterate people and there is also a possibility of respondents misinterpreting the questions. Respondents may also provide false or irrelevant information on subjects they are not familiar with. The wording of the questionnaire can bias respondents.

3.4.2 Interviews

An interview can be defined as a meeting between two people, the interviewer and the interviewee. (Holbon 2002). The researcher used face to face interviews and telephone interviews to strengthen the research. The researcher used personal interviews to observe other non- verbal communication and gestures used by the respondents.

3.4.2.1 Merits of interviews

Interviews provide precise and relevant answers since the respondents will be answering what they are asked and the respondents are given an opportunity to freely express themselves airing out their views. There is room for clarity if respondents do not understand the questions asked, hence avoiding misinterpretations and irrelevant answers. Interviews are cost efficient, no pro-longed responses, since feedback is provided promptly.

3.4.2.2 Demerits of interviews

Considering the company being private, some information could not be reviewed during interviews since the respondents had to respect the confidentiality of information. There is also a problem of respondents failing to meet the appointment due to other commitments, they considered important.

3.4.3 Open Ended questions

According to www.mediacollege.com (31.08.14) open ended questions are described as those questions designed to encourage full meaningful responses using one's knowledge and feelings. The questions are more objective and less leading as compared to closed ended questions. They are sometimes called unsaturated type questions or infinite response.

3.4.3.1 Merits of open- ended questions

Open- ended questions are perceived to be less threatening, that is they allow free response and may be more useful with eloquent users. The researcher is more likely to develop trust in the responses. Respondents are allowed to include information regarding their feelings, their attitudes and understanding of the research subject and this eventually helps the researcher to better access the respondents' true feelings.

3.4.3.2 Demerits of open- ended questions

This method is time consuming and as a result may lead to unnecessary information gathered that may require more effort on the part of the researcher. Responses may tend to lose their meaning in the event that the questions are quantitatively analyzed, that is there is lack of statistical evidence that is required to make research conclusions.

3.4.4 Closed-ended questions

Closed ended questions are those questions that can be answered finitely with either a "yes" or a "no". (www.mediacollege.com) (31.08.14). They can also be referred to as dichotomous or saturated type questions, which include presuming, probing or leading questions. The site, cited the pros and cons of this type of questions, and are cited below.

3.4.4.1 Merits of closed-ended questions

The questions are quick and require little time investment, since the answer is just a "yes" or a "no". Analysis of these questions is easy. Each question is given a statistical value for easy interpretation, hence making the suitable for computer analysis.

3.4.4.2 Demerits of closed-ended questions

When using the closed ended questions, there is a risk of incomplete responses. The questions can be leading and hence threatening to user can result in misleading conclusions about the user's information need. It also requires more time with inarticulate users.

3.4.5 Likert Scale

According to <http://en.wikipedia.org/wiki/> (27.08.14) a likert scale is defined as psychometric scale used in research that employs questionnaires. It is mostly used to scale responses in survey research. Respondents specify their level of agreement or disagreement when responding to a likert questionnaire item on a symmetric agree-disagree scale for a series of statements as shown by a sample of a likert scale below:

5	-	Strongly agree
4	-	Agree
3	-	Uncertain
2	-	Disagree
1	-	Strongly Disagree

The left marked from 5 down to 1 are the points awarded to each response given.

There are advantages and disadvantages cited at <http://blog.smartsurvey.co.uk>(27.08.14) which are:

3.4.5.1 Advantages of a Likert Scale

The questions used on a likert scale are easy to understand and so they lead to consistent answers, hence it is even easy to draw conclusions and graphs from the data since it is quantitative. The scale allows people to be neutral, since they are forced not to express an either-or opinion because of the designing of the questions. Moreover this method is flexible, easy and quick because of its ability to be sent through all communication medias, even as a message.

3.4.5.2 Disadvantages of a Likert Scale

The questions on the likert scale are undimensional since they only give a certain amount of choices implying that the space between each possibility is equidistant, which is not practical

in actual sense. This method restricts respondents to the options offered with which they may not fully agree with, hence limits the respondents to freely express their views.

3.5 Reliability and Validity

Bhattacharjee, A, (2012) postulated that reliability and validity are called psychometric properties of measurement scales. Adequacy and accuracy of measurement procedures are evaluated by these yardsticks. A measure can be reliable but not valid and vice versa, hence both reliability and validity are needed to assure adequate measurement. Findings are said to be valid when they are real and legal and data is said to be reliable when the same measurements are repeated and the results yielded are the same. The researcher had to pilot the questionnaires and interview guides before administering them to the respondents to ensure reliability.

According to Carolyn (2005:44), an instrument is considered to be valid when the intended measure has been accurately achieved. The researcher had to analyze and equate data to the sub-research questions to ensure validity.

3.6 Data presentation

According to www.eqavet.eu (31.08.14) data presentation includes the description of the data set distributed with the main variables covered, the classifications and breakdowns used, the reference area, summary information on the time period covered and if relevant, the base period used. The researcher used tables, pie charts and graphs in the presentation of data. Presentation in tabular form involves the arrangement of data into frequency distribution showing how frequent each response has occurred. The justification for the use of such methods in data presentation is that they bring in more understanding to various users of the information. Pie charts and graphs are a more summarized presentation of data where one can follow and easily draw conclusions.

3.7 Data Analysis

Data analysis refers to the process of developing answers to questions through the examination and interpretation of data. It involves the identification of issues, determination of the availability of suitable data, deciding on the appropriate method of answering questions of interest, applying the methods, summarizing, evaluating and communicating the results. (www.statcan.gc.ca) (31.08.14). According to Robinson (2004), a specific qualitative approach undertaken determines the form of analysis to be used. There are considerations a researcher should take into account concerning data analysis which includes possessing the

necessary skills to analyze, selecting data methods and an appropriate analysis, partitioning text when analyzing data, etc. Various methods of data analysis may be used, which includes the standard deviation, mean, median, mode, to mention just a few. The researcher had to make use of the mean and the mode in most cases, since they produce non-assumptive and logical results.

3.8 Summary

The objective of this chapter was to describe the research methodology that the researcher used in carrying out the study. It looked at the research design, target population, sampling techniques, sample size, research instruments, validity and reliability of the methods used, the data presentation and analysis and summary. The next chapter is on data presentation and analysis of research findings

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

The chapter aims at presenting and analysing the research findings in a logical manner that enables interpretation and conclusions to be easily drawn. The discussions in this chapter form a basis for conclusions and recommendations to be made. The chapter responded to the research objective of investigating the SHE cost structures at Windmill Ltd.

4.1 Response Rate

According to Shukla (2008:29), response rate is defined as the completion or return rate as the numerical relationship of the number of subjects which responded to the survey, divided by the number of people in total comprising the sample. It is usually expressed as a percentage. StatPac (2007:38) supported the view and expressed response rate as an indication of how much confidence can be placed on the results of the research and the extend of the reliability of the findings.

4.1.1 Questionnaire response rate

Table 4.1: Questionnaire response rate

Respondents Category	Questionnaires distributed	Questionnaires returned	Response Rate
Finance	7	7	100%
R&D	5	5	100%
Human and Resources	6	4	66,67%
Production	8	6	75%
Purchasing	5	5	100%
SHE	9	9	100%
Total	40	36	90%

Source: Primary Data

Forty questionnaires were distributed to management and the employees from which 36/40 (90%) were completed and returned whilst 4/40 (10%) were not returned. Though the response rate did not reach 100%, according to Monkey (2009), 90% can be regarded as reliable since it is far above the recommended literature of 70%. Punch (2008) postulated

that, a 50% response rate is adequate, 60% is good, 70% is very good and 80% and above is excellent. Therefore the response rate of 90% is excellent.

4.1.2 Interviews response rate

Table 4.2: Interview response rate

Response category	Interviews arranged	Interviews conducted	Response rate
Finance	2	1	50%
SHE	2	2	100%
Production	2	2	100%
Human Resources	2	2	100%
Total	8	7	87,5%

Out of the 8 interviews arranged, 7 which is 87, 5% were conducted and 1 which is 12, 5% was not conducted because the respondent was committed to other business. However it can be concluded that the sample gathered is adequate and sufficient to represent the total population.

4.2 Presentation of respondents' gender

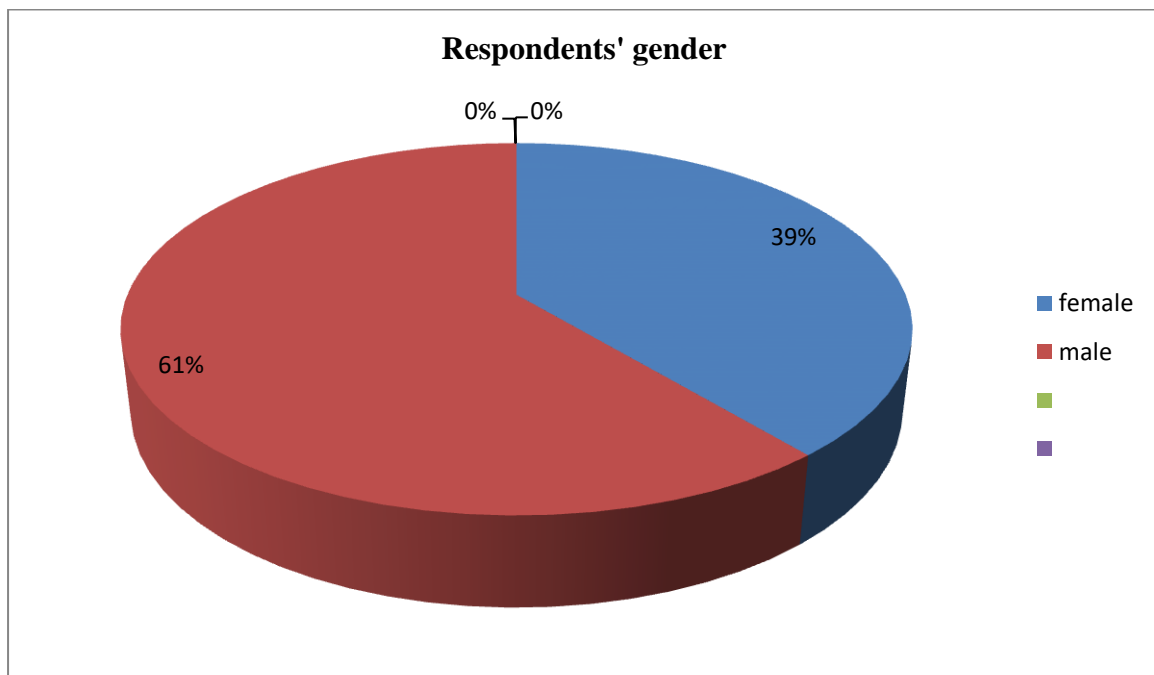


Figure 4.1 Respondents' gender

The response rate showed that 22/36 (61%) were males and 14/36 (39%) of the respondents were females.

Table 4.3 Presentation of data on working experience of the respondents

Experience in the positions	<1yr	1-5 yrs	6-10yrs	>10yrs	Total
Responses	0	15	15	6	36
Responses in percentage (%)	0	41,67	41,67	16,6	100

From the findings, it shows that 0/36(0%) have less than I year, 15/36 (41,67%) have 1-5years experience, 15/36 (41,67%) are in 6-10 years range and 6/36 (16,6%) are above 10 years. The results show reliability on the findings since all the respondents seem to be experienced in their positions.

4.3 Existence of a SHE policy at Windmill

4.3.1 Windmill has a SHE policy

Table 4.4 Responses on the existence of the SHE policy

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
Responses	30	6	0	0	0	36
Responses in percentage (%)	83	17	0	0	0	100

The researcher found that 30/36 (83%) of the respondents strongly agreed, 6/36 (17%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. The results of the research findings show that Windmill Ltd has a SHE policy. It is supported by the interview responses which showed a response rate of 100% that there is a SHE policy at Windmill Ltd.

4.3.2 The policy is formally documented

Table 4.5: Responses on the SHE policy documentation

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
Responses	28	8	0	0	0	36
Responses in percentage (%)	78	22	0	0	0	100

From the research findings, 28/36 (78%) of the respondents strongly agreed, 8/36 (22%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. From the results, it can be safely concluded that Windmill SHE policy is formally documented.

4.3.3 All sub-ordinates are aware of the SHE policy

Table 4.6: Responses on employee SHE awareness

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
Respondents	23	12	1	0	0	36
Responses in percentage (%)	64	33	3	0	0	100

23/36 (64%) respondents strongly agreed that employees are aware of the SHE policy, 12/36 (33%) agreed, 1/36 (3%) was uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. The results show that employees are aware of the SHE policy.

4.3.4 SHE induction to new personnel

Table 4.7: Responses on SHE induction to new personnel

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
Respondents	25	11	0	0	0	36
Responses in percentage (%)	69	31	0	0	0	100

From the study findings, it shows that 25/36 (69%) strongly agreed that new personnel is inducted, 11/36 (31%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. From the interview responses, 100% agreed that there is an opportunity for induction to new personnel. Therefore new personnel at Windmill are inducted for SHE.

4.3.5 Explanations are given to employees for better understanding of the SHE policy

Table 4.8: Responses on SHE policy explanations to employees

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
Respondents	19	17	0	0	0	36
Responses in percentage (%)	53	47	0	0	0	100

The respondents that strongly agreed that SHE policy explanations are given to employees for better understanding were 19/36 (53%), 17/36 (47%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. An aggregation of respondents who strongly agreed and those who agreed add up to 100%. Therefore it can be concluded that explanations are given to employees for better understanding of the SHE policy at Windmill Ltd.

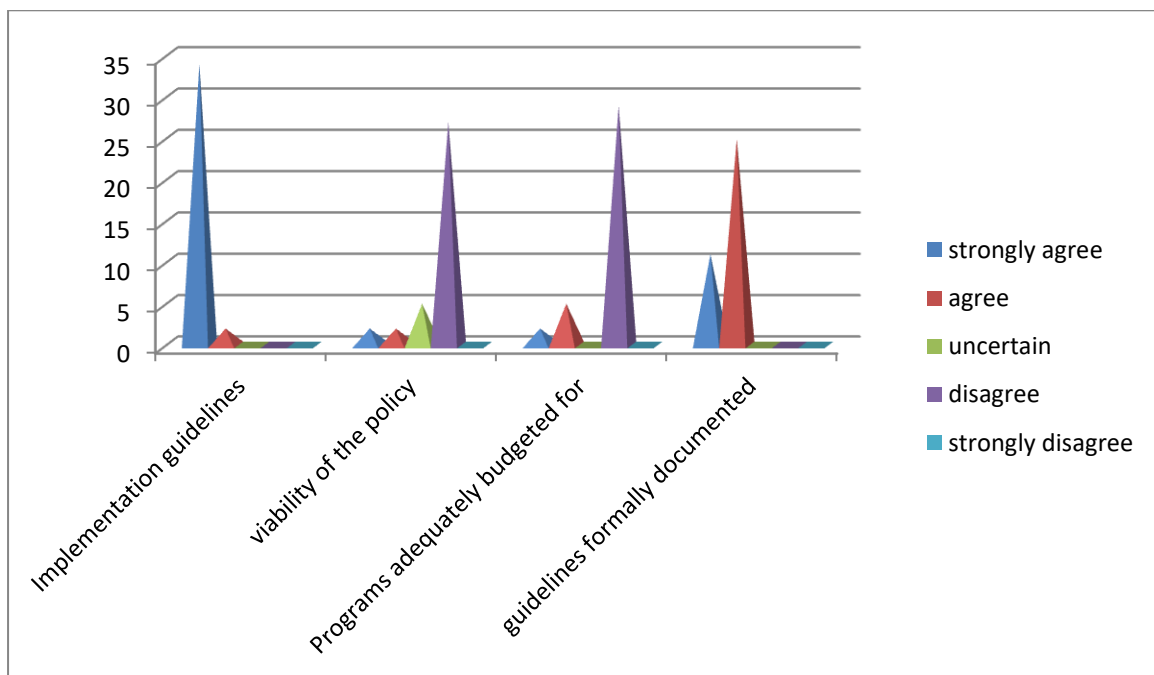


Figure 4.2: SHE Policy implementation Guidelines

4.4.1 SHE policy implementation guidelines at Windmill

From the data presented, 34/36 (94%) strongly agreed that there are SHE policy implementation guidelines at Windmill Ltd, 2/36 (6%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. From the results, 94% strongly agreed and 6% agreed, therefore it shows that there are SHE policy implementation guidelines at Windmill.

4.4.2 Viability of the SHE policy

Results about the viability of the SHE policy showed that 2/36 (6%) strongly agreed that the SHE policy is viable, 2/36 (6%) agreed, 5/36 (13%) were uncertain, 27/36 (75%) disagreed and 0/36 (0%) strongly disagreed. From the research findings it can be denoted that, 75% being the majority of the respondents disagreed that the SHE policy at Windmill is viable. Therefore it can be concluded that the policy is not viable.

4.4.3 SHE programs are adequately budgeted for

Research findings show that 2/36 (6%) strongly agreed that SHE programs are adequately budgeted for, 5/36 (13%) agreed, 0/36 (0%) were uncertain, 29/36 (81%) disagreed and 0/36 (0%) strongly disagreed. More than three quarters of the respondents disagreed that SHE programs are being adequately budgeted for. Therefore SHE programs at Windmill Ltd are not adequately budgeted for.

4.4.4 Implementation guidelines are formally documented

11/36 (31%) strongly agreed that the SHE policy implementation guidelines at Windmill are formally documented, 25/36 (69%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. An aggregation of respondents who strongly agreed and those who agreed is 100% (since they are both in the range of agreeing). Therefore the researcher concluded that the SHE policy implementation guidelines at Windmill Ltd are formally documented.

4.5 Adequacy of personnel to implement the SHE policy

4.5.1 SHE representative in every department

Table 4.9 Responses on SHE representative in every department

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
Respondents	23	10	3	0	0	36
Responses in percentage (%)	64	28	8	0	0	100

From the responses, 23/36 (64%) strongly agreed that there is a SHE representative in every department, 10/36 (28%) agreed, 3/36 (8%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. The majority of the respondents agreed and strongly agreed that there is a SHE representative in every department. Therefore it shows that there exists a SHE representative in every department at Windmill Ltd.

4.5.2 Senior supervisor who help the committee to implement the policy

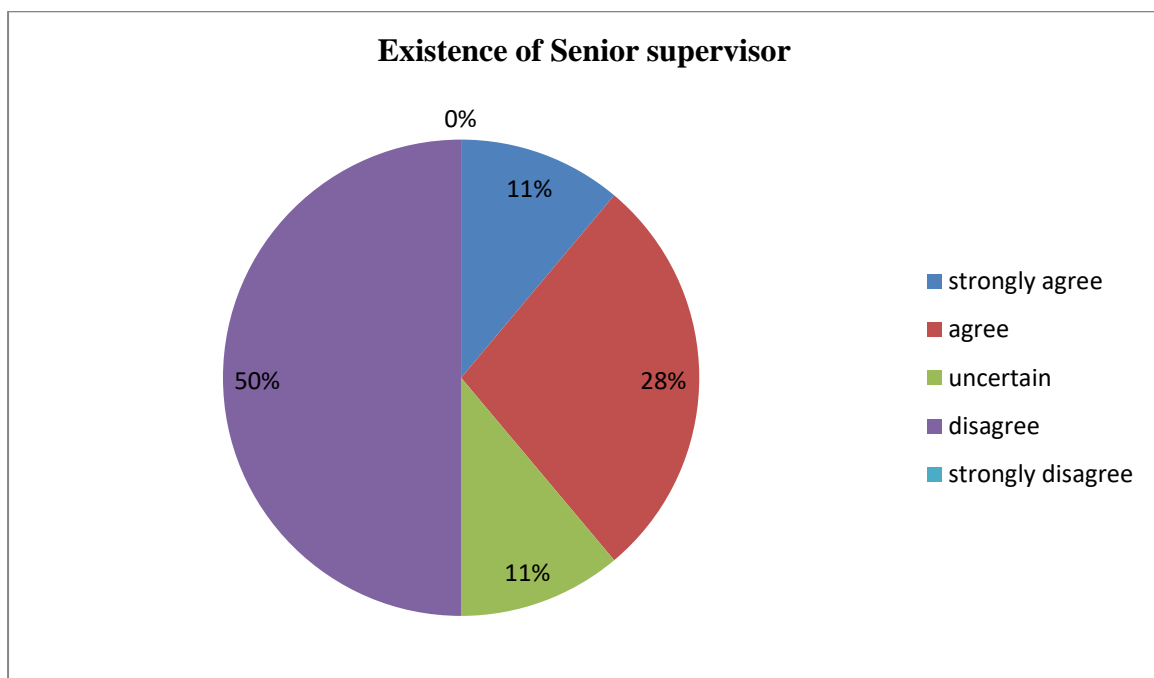


Figure 4.3 Responses on the existence of a Senior SHE supervisor

From the research findings, 4/36 (11%) strongly agreed that there is a senior SHE supervisor who helps in the implementation of the policy, 10/36 (28%) agreed, 4/36 (11%) were uncertain, 18/36 (50%) disagreed and 0/36 (0%) strongly disagreed. The results show that

less than half of the respondents agreed and half of the respondents disagreed, therefore the researcher concluded that some departments have senior supervisors and some do not have.

4.5.3 Windmill retrains its personnel for new developments

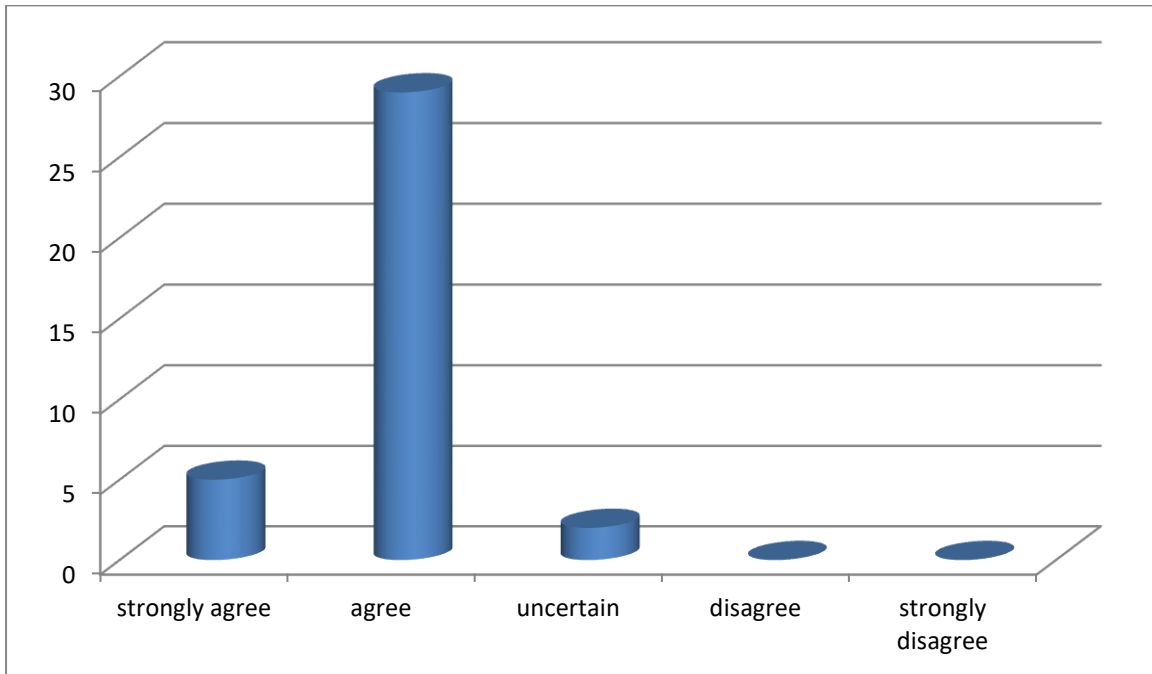


Figure 4.4 Responses on personnel retraining for new developments

From the study survey, results show that 5/36 (14%) strongly agreed that Windmill retrains its employees for new developments, 29/36 (81%) agreed, 2/36 (5%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. Therefore 81% agreed and 14% strongly agreed, which shows that Windmill retrains its personnel for new developments on SHE.

4.5.4 Financial resources are accessible to help committee to implement the SHE policy

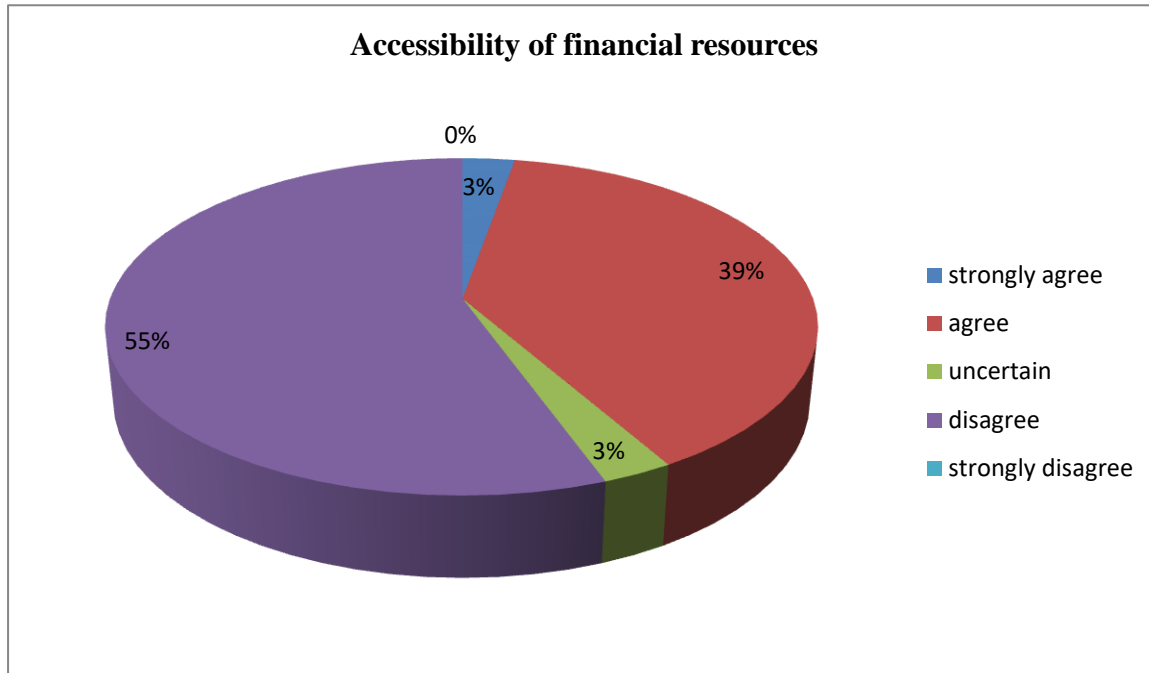


Figure 4.5 Responses on the accessibility of financial resources

From the research findings, 1/36 (3%) strongly agreed, 14/36 (39%) agreed, 1/36 (3%) were uncertain, 20/36 (55%) disagreed and 0/36 (0%) strongly disagreed. The results show that more than half of the respondents disagreed that financial resources are accessible maybe because the respondents were from departments such as the Research and Development, Production, etc, so they may not be aware of the accessibility of financial resources. However, the researcher concluded that, financial resources are accessible but to a certain extent, as supported by the responses from the interviews.

4.5.5 Employees undergo SHE re-induction after a certain period

Table 4.10 Responses on SHE re-induction

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
No of Respondents	3	4	1	28	0	36
Responses in percentage (%)	8	11	3	78	0	100

The study showed that 3/36 (8%) strongly agreed that employees undergo SHE re-induction after a certain period, 4/36 (11%) agreed, 1/36 (3%) were uncertain, 28/36 (78%) disagreed

and 0/36 (0%) strongly disagreed. Therefore the researcher concluded that employees are not re-inducted for SHE since 78% of the respondents disagreed.

4.5.6 A First Aid team is reserved for any SHE emergencies

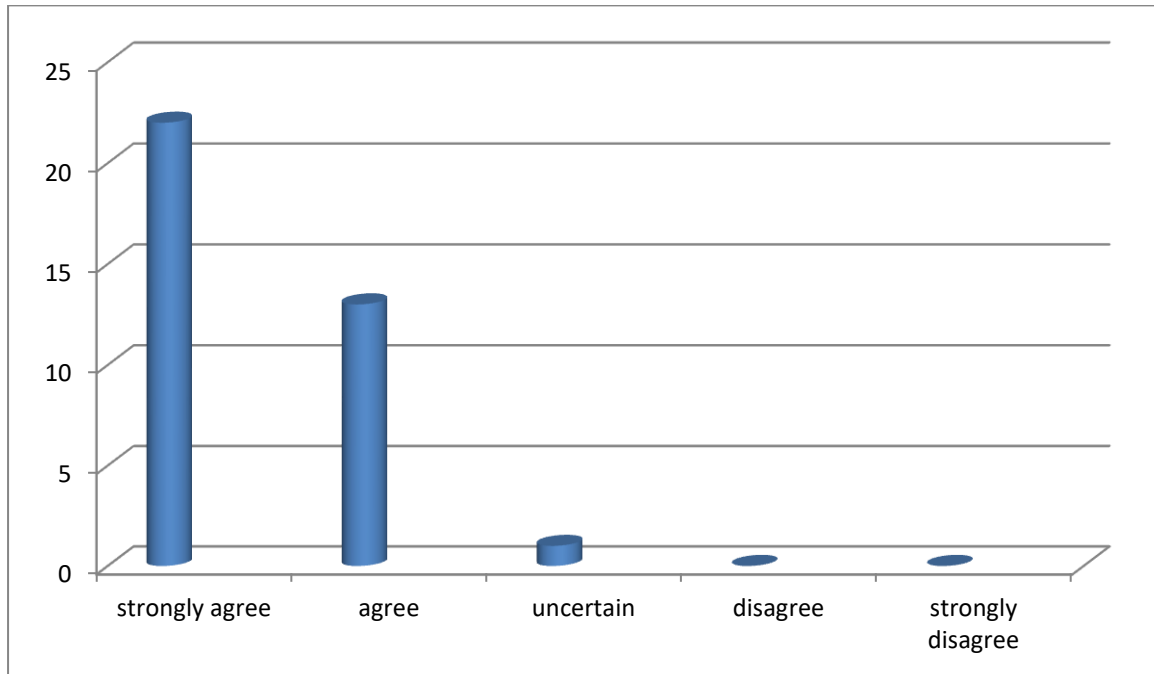


Figure 4.6 Responses on whether there is a First Aid team for emergencies

The results from the study show that 22/36 (61%) strongly agreed that there is a first aid team for any SHE emergencies, 13/36 (36%) agreed, 1/36 (3%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. It can be noted that 61% strongly agreed and 36% agreed, therefore, the researcher concluded that there is a first aid team reserved for any SHE emergencies at Windmill Ltd.

4.6 SHE policy implementation challenges

Table 4.11 Feedback on the SHE policy implementation challenges

Narration	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Total
(i)Employee resistance	86%	11%	0%	3%	0%	100%
(ii)Lack of adequate time to implement	80%	17%	0%	3%	0%	100%
(iii)Weak management of industry dynamics	69%	11%	14%	6%	0%	100%

(iv)Lack of qualified personnel	11%	11%	6%	69%	3%	100%
(v)Lack of adequate financial resources	80%	17%	0%	3%	0%	100%
(vi)Lack of understanding of objectives	80%	14%	3%	3%	0%	100%
(vii)Imperfect communication	80%	14%	3%	3%	0%	100%
(viii)Changes in the regulatory environment	53%	19%	22%	6%	0%	100%
(ix)Inadequate information dissemination	78%	13%	6%	3%	0%	100%

4.6.1 Employee resistance

The results from the research findings show that 31/36 (86%) strongly agreed that there was a challenge of employee resistance during implementation, 4/36 (11%) agreed, 0/36 (0%) were uncertain, 1/36 (3%) disagreed and 0/36 (0%) strongly disagreed. The majority of the respondents which is 96% agreed, therefore Windmill Ltd suffered employee resistance during implementation.

4.6.2 Lack of adequate time to implement the SHE policy

Results shows that 29/36 (80%) strongly agreed that they lacked adequate time to implement the policy, 6/36 (17%) agreed, 0/36 (0%) were uncertain, 1/36 (3%) disagreed and 0/36 (0%) strongly disagreed. Therefore 97% agreed that they lacked adequate time, so the researcher concluded that the employees lacked adequate time to implement the policy.

4.6.3 Weak management of industry dynamics

From the findings, 25/36 (69%) strongly agreed that there was weak management of industry dynamics, 4/36 (11%) agreed, 5/36 (14%) were uncertain, 2/36 (6%) disagreed and 0/36 (0%) strongly agreed. It can be noted that 80% of the total respondents agreed, therefore it can be concluded that there was weak management of industry dynamics.

4.6.4 Lack of qualified personnel

4/36 (11%) strongly agreed that there is lack of qualified personnel, 4/36 (11%) agreed, 2/36 (6%) were uncertain, 25/36 (69%) disagreed and 1/36 (3%) strongly disagreed. From the results 70% disagreed that there was lack of qualified personnel during the implementation of the policy, hence the researcher concluded that Windmill had qualified personnel.

4.6.5 Lack of adequate financial resources

The results from the research findings show that 29/36 (80%) strongly agreed that they lacked adequate financial resources during implementation, 6/36 (17%) agreed, 0/36 (0%) were uncertain, 1/36 (3%) disagreed and 0/36 (0%) strongly disagreed. From the results it shows that 97% agreed that there are inadequate financial resources to implement the policy, therefore, the researcher made a conclusion that, Windmill Ltd lacks adequate financial resources to implement the SHE policy.

4.6.6 Lack of understanding of objectives

The research findings indicates that 29/36 (80%) strongly agreed that employees at Windmill lacks understanding of the SHE objectives, 5/36 (14%) agreed, 1/36 (3%) were uncertain, 1/36 (3%) disagreed and 0/36 (0%) strongly disagreed. An aggregation of respondents who strongly agreed and those who agreed make 94%. Therefore the researcher concluded that, employees and management at Windmill lacks understanding of the objectives of SHE.

4.6.7 Imperfect communication

From the data gathered, 29/36 (80%) strongly agreed that there is poor communication in the organisation concerning SHE issues, 5/36 (14%) agreed, 1/36 (3%) were uncertain, 1/36 (3%) disagreed and 0/36 (0%) strongly disagreed. Therefore from the results, it shows that there is imperfect communication in the organisation concerning SHE issues.

4.6.8 Changes in the regulatory environment

The study findings show that 19/36 (53%) strongly agreed that they faced a challenge of changes in the regulatory environment, 7/36 (19%) agreed, 8/36(22%) were uncertain, 2/36 disagreed and 0/36 (0%) strongly disagreed. From the results, it shows that 72% agreed that there were changes in the regulatory and 22% were uncertain, maybe this is because of imperfect communication in the organisation. Therefore it seems the respondents who agreed most of them are from the SHE department; however the researcher concluded that they faced this challenge.

4.6.9 Inadequate information dissemination

From the information gathered during research, 28/36 (78%) strongly agreed that there is inadequate information dissemination at Windmill, 5/36 (13%) agreed, 2/36 (6%), 1/36 (3%) disagreed and 0/36 (0%) strongly disagreed. The results show that 91% agreed and therefore this being enough evidence to the researcher to conclude that there is inadequate information dissemination amongst Windmill employees.

4.7 Controls put in place by Windmill to ensure compliance with the SHE policy

4.7.1 The SHE policy is clearly posted and available to employees

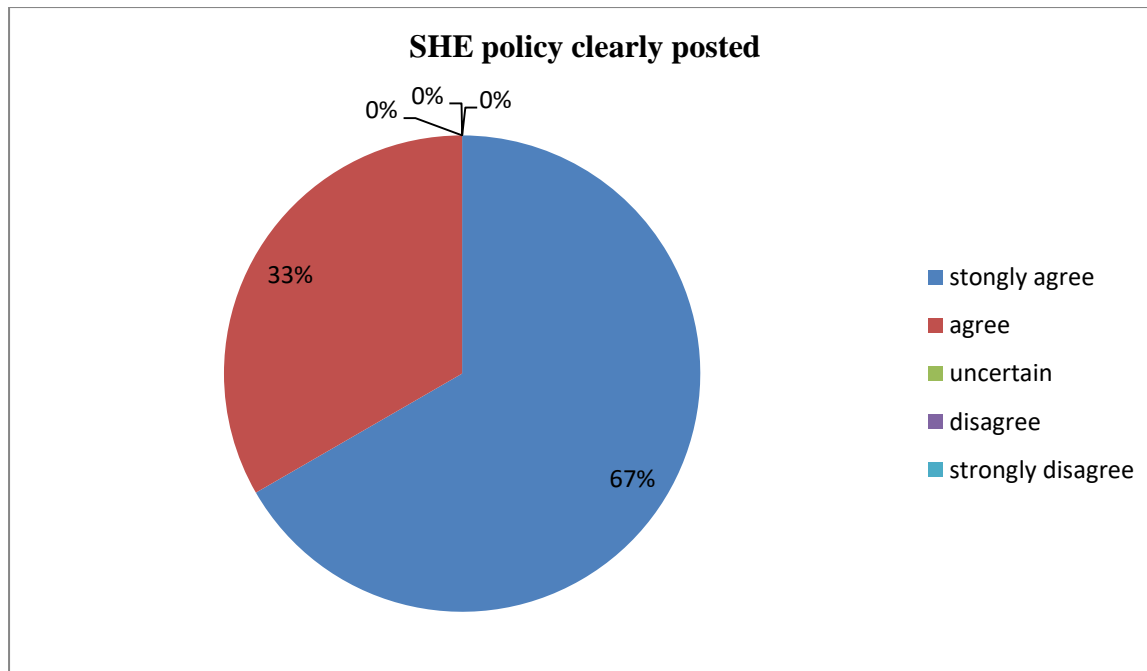


Figure 4.7 Responses on whether the SHE policy is clearly posted to employees

Responses show that 24/36 (67%) strongly agreed that the SHE policy is clearly posted and available to employees, 12/36 (33%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. The results show that 100% agreed and is further evidenced by responses from interviews which also showed 100% agreement. Therefore the researcher concluded that SHE policy is clearly posted and available to employees.

4.7.2 There is a common database for hazardous material safety information, eg, melting point

Table 4.12 Responses on whether there is a common database for hazardous material

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
No of Respondents	30	6	0	0	0	36
Responses in percentage (%)	83	17	0	0	0	100

From the research findings, 30/36 (83%) strongly agreed that there is a common database for hazardous material safety information, 6/36 (17%) agreed, 0/36 (0%) were uncertain, 0/36

(0%) disagreed and 0/36 (0%) strongly disagreed. It shows that 100% agreed. Therefore there is a common database for hazardous material safety information at Windmill.

4.7.3 There are adequate penalties for violation of SHE laws

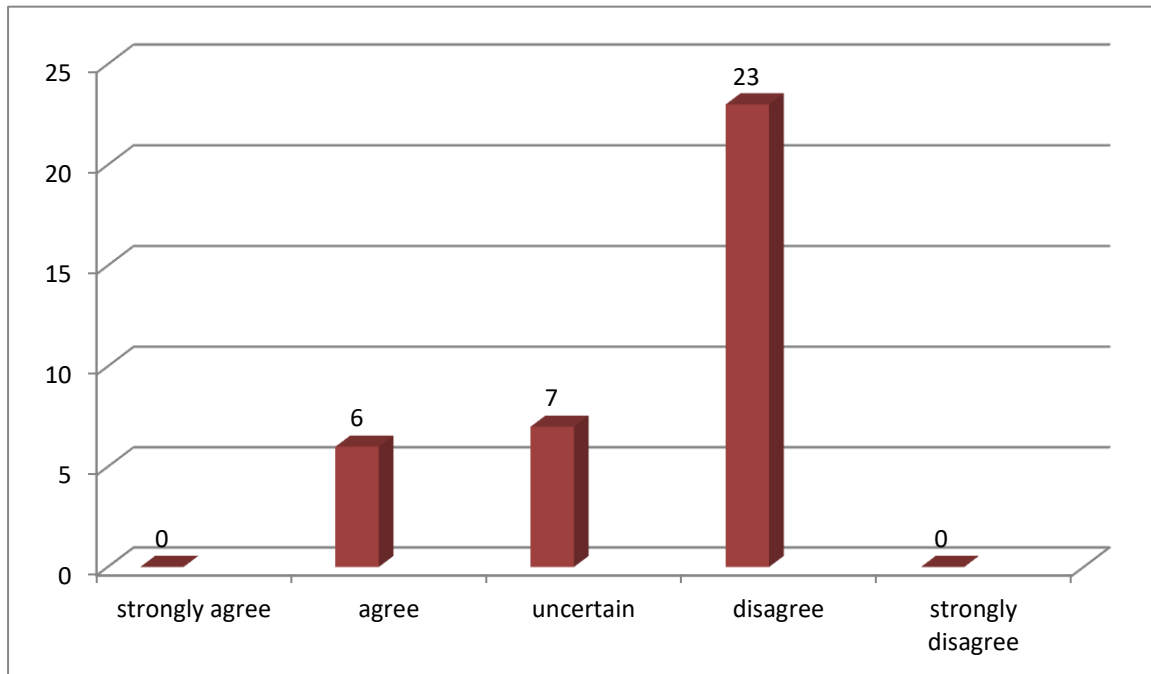


Figure 4.8 Responses on the existence of penalties for violation of SHE laws

From fig 4.7.2, it can be noted that 0/36 (0%) strongly agreed that there are penalties for violation of SHE laws, 6/36 (17%) agreed, 7/36 (19%) were uncertain, 23/36 (64%) disagreed and 0/36 (0%) strongly disagreed. From the results, it shows that more than half of the respondents disagreed (64%) and 19% were uncertain, so the researcher concluded that there are no penalties for violation of SHE laws, if they exist, it seems they are not well communicated.

4.7.4 Audit mechanisms established to test and authenticate SHE systems

Table 4.13 Responses on establishment of Audit mechanisms

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
No of Respondents	27	9	0	0	0	36
Responses in percentage (%)	75	25	0	0	0	100

27/36 (75%) strongly agreed that there are audit mechanism to test and authenticate SHE systems, 9/36 (25%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. The results show that 100% agreed and therefore, the researcher concluded that there are audit mechanisms at Windmill Ltd.

4.7.5 Personnel held accountable for completing tasks according to SHE standards

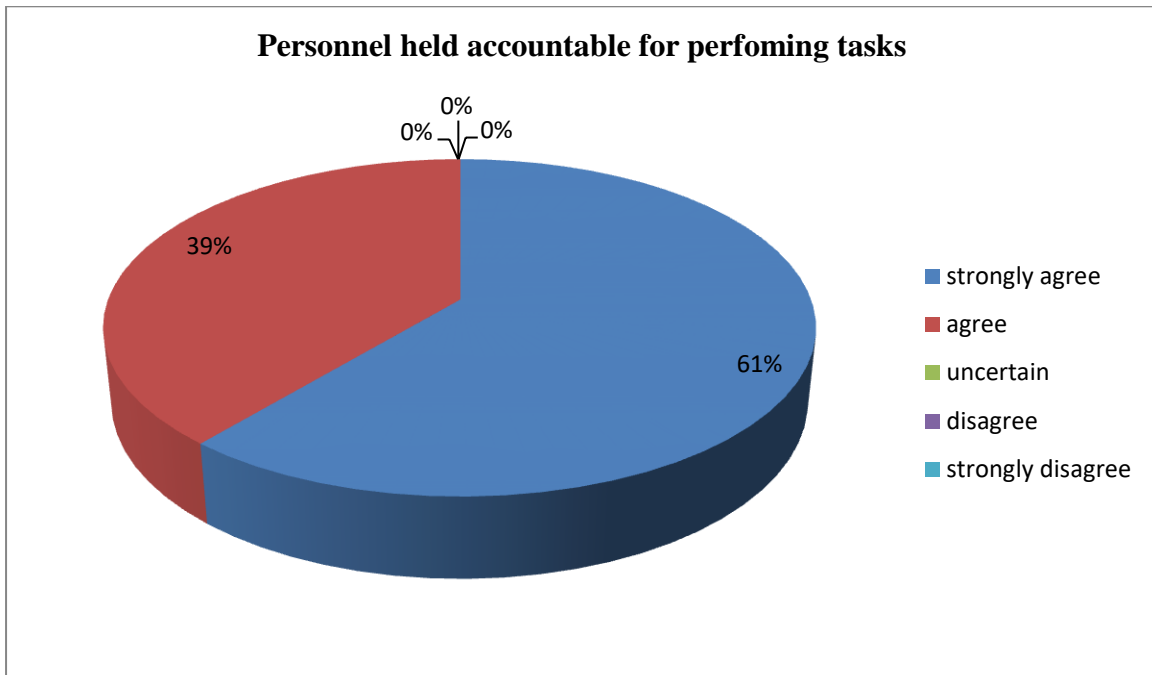


Figure 4.9 Responses on personnel accountability

22/36 (61%) strongly agreed that personnel are accountable for performing tasks according to SHE standards, 14/36 (39%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. The results show that 100% agreed and therefore, the researcher concluded that personnel at Windmill are held accountable for performing tasks according to SHE standards.

4.7.6 Regular SHE meetings are conducted

Table 4.14 Responses on whether SHE meetings are conducted regularly

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
No of Respondents	30	3	0	3	0	36
Responses in percentage (%)	84	8	0	8	0	100

From the research findings, 30/36 (84%) strongly agreed that SHE meeting are conducted regularly, 3/36 (8%) agreed, 0/36 (0%) were uncertain, 3/36 (8%) disagreed and 0/36 (0%) strongly disagreed. The results show that 92% agreed and therefore, the researcher concluded that SHE meetings are held regularly at Windmill either weekly or fortnightly.

4.7.7 There different levels of authorisation limits on SHE expenditure

Table 4.15 Responses on whether there are different levels of authorisation on SHE expenditure

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
No of Respondents	14	22	0	0	0	36
Responses in percentage (%)	39	61	0	0	0	100

From the data gathered, 14/36 (39%) strongly agreed that there are different levels of authorisation on SHE expenditures, 22/36 (61%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. The results show that 100% agreed and therefore, the researcher concluded that there are different levels of authorisation on SHE expenditures.

4.7.8 There are disciplinary actions such as suspension or docked pay for managers who do not follow SHE procedures

Table 4.16 Responses on whether there are disciplinary actions for management

Responses	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Total
No of Respondents	1	2	3	25	5	36
Responses in percentage (%)	3	6	8	69	14	100

From the research findings, 1/36 (3%) strongly agreed that there are disciplinary actions to management, 2/36 (6%) agreed, 3/36 (8%) were uncertain, 25/36 (69%) disagreed and 5/36 (14%) strongly disagreed. The results show that 83% agreed and therefore, it can be concluded that there are no disciplinary actions to management who do not follow SHE procedures.

4.8 The best SHE policy for Windmill

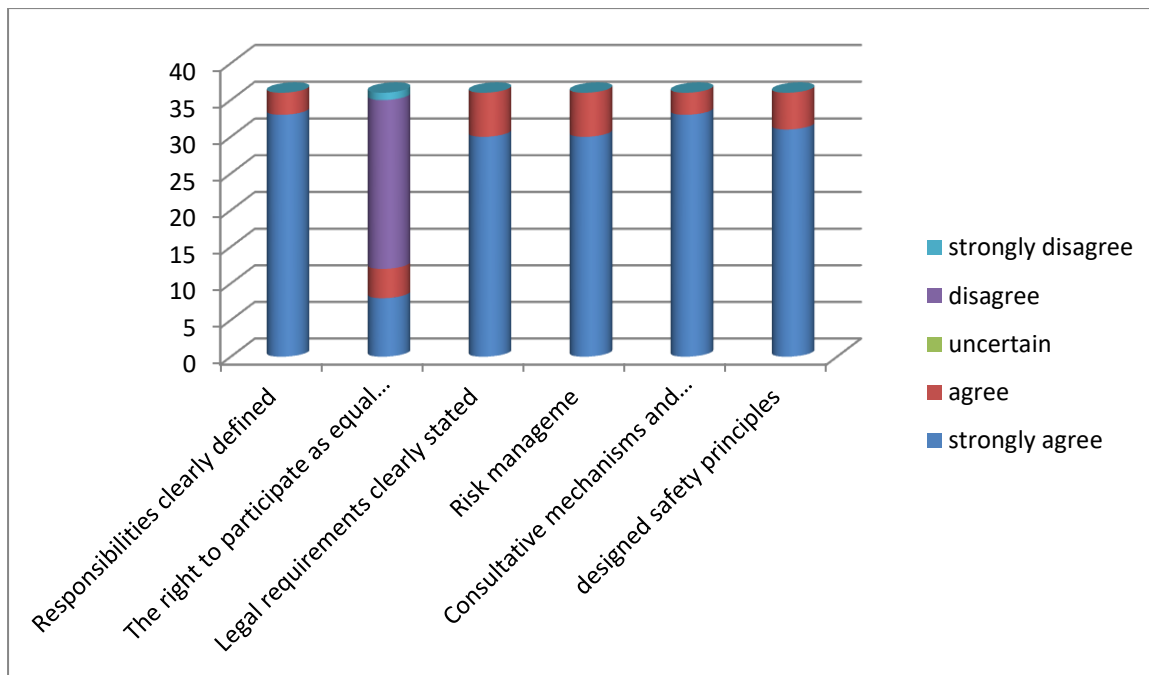


Figure 4.10 Responses on the Best SHE policy

4.8.1 Responsibilities should be clearly defined

From the data presented, 33/36 (92%) strongly agreed that for a best SHE policy for Windmill, it should contain responsibilities clearly defined, 3/36 (8%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. From the results it shows that 100% respondents agreed. Therefore Windmill SHE policy should contain responsibilities clearly defined.

4.8.2 The right to participate as equal partners at every decision making level

The results show that 8/36 (22%) strongly agree that the right to participate as equal partners at every decision making level should be established, 4/36 (11%) agreed, 0/36 (0%) were uncertain, 23/36 (64%) disagreed and 1/36 (3%) strongly agreed. The majority being 67% of the total respondents disagreed. Responses from interviews showed that 100% of the respondents disagreed. Therefore the researcher concluded that the right to participate as equal partners at every decision making level should not be established.

4.8.3 Legal requirements clearly stated

From the research findings, 30/36 (83%) strongly agreed that legal requirements should be clearly stated, 6/36 (17%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. From the results it shows that 100% respondents agreed. Therefore it shows that Windmill employees and management agree that for a best SHE policy to be achieved, legal requirements should be clearly stated.

4.8.4 Risk management processes

The research findings indicate that 30/36 (83%) strongly agreed that the SHE policy should contain risk management processes, 6/36 (17%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. From the results it can be denoted that 100% agreed. Therefore the researcher concluded that Windmill SHE policy should contain risk management processes.

4.8.5 Consultative mechanisms and proactive communication

From the data presented, 33/36 (92%) strongly agreed that for a best SHE policy for Windmill, it should contain consultative mechanisms and proactive communication procedures, 3/36 (8%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. From the results it shows that 100% respondents agreed. Therefore Windmill SHE policy should contain consultative mechanisms and proactive communication procedures.

4.8.6 Designed safety principles that encompass the full product life cycle

The results from the research findings show that 31/36 (86%) strongly agreed that the SHE policy should contain designed safety principles that encompass the full product life cycle, 5/36 (14%) agreed, 0/36 (0%) were uncertain, 0/36 (0%) disagreed and 0/36 (0%) strongly disagreed. Results show that 100% agreed and 100% also agreed from interview responses. Therefore the researcher concluded that Windmill SHE policy should contain designed safety principles that encompass the full product life cycle.

4.9 Summary

The chapter presented and discussed the data gathered on the SHE cost structures at Windmill Ltd. It provided the basis on which recommendations and conclusions will be made in the chapter to follow.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter focuses on the major findings of the research, recommendations to the study and suggestions on areas for further study. It summarizes the related literature to the study, the research methodology and the implications which provide the basis on which recommendations and conclusions are drawn from.

5.1 Chapter Summaries

Chapter one focused on the background to the problem where the researcher cited the thrust of carrying out a study on the SHE cost structures in a manufacturing firm. The main research objective was to investigate on the SHE cost structures of a manufacturing entity. The chapter also cited the sub research questions, sub research objectives, significance of the study, delimitation, assumptions, limitations of the study and the definition of terms.

Chapter two focused on the related literature to the SHE cost structures in a manufacturing company. The literature showed the extent reached by other authors and scholars who were cited to support the subject of the research.

The third chapter looked at the research methodology. The researcher used the descriptive research design and the sample was selected from both Windmill management and employees on which the stratified random sampling technique was used to come up with a sample size of forty out of fifty members of staff. The researcher used questionnaires and interviews as the research instruments, using both closed and open ended questions.

Chapter four focused on the presentation and analysis of the research findings. The researcher used tables, pie charts and graphs to present the data gathered. The mode was used in data analysis and data was analysed both in numbers and percentages.

5.2 Major findings

- ❖ There is a SHE policy at Windmill Ltd. The policy is formally documented and the sub-ordinates are aware of the SHE policy. Windmill SHE policy provides an opportunity for induction to new personnel and explanations are given to employees for better understanding of the policy.

- ❖ There are SHE policy implementation guidelines but the SHE policy is not viable. SHE programs at Windmill are inadequately budgeted for and the policy implementation guidelines are formally documented.
- ❖ There are adequate personnel to implement the SHE policy at Windmill but financial resources are inaccessible to help the committee implement the policy. There is a First Aid team reserved for any SHE emergencies but there is no senior supervisor to help the committee to implement the policy. Windmill staff does not undergo a re-induction after a certain period though staff is retrained for new developments.
- ❖ They faced a lot of challenges during implementation including employee resistance, lack of adequate time to implement. Management and employees at Windmill do not understand the objectives of SHE. Though there are qualified personnel, financial resources are inadequate to implement the policy and there is inadequate information dissemination.
- ❖ The SHE policy is clearly posted and available to employees as well as a common database for hazardous material safety information eg, melting point, boiling point, toxicity, etc. Though personnel are held accountable for completing tasks according to SHE performance standards, there are no penalties for violation of SHE laws. Audit mechanisms are established to test and authenticate SHE systems and there are different levels of authorisation limits on certain SHE expenditures.
- ❖ Management and employees at Windmill concurred with the idea that, for a better SHE policy, responsibilities should be clearly defined, legal requirements clearly stated, risk management processes and should have designed safety principles. However it did not go well with the majority of the employees to establish the right to participate as equal partners at every decision level since they believe that the decision making process may take long or either to avoid conflicts.

5.3 Conclusion

The research was successful since it managed to draw and get the attention of its targeted respondents and intended interviewees. It was successful in identifying the existence of the SHE policy at Windmill Ltd and the existence of SHE policy implementation guidelines. It also managed to uncover some gaps and areas of concern in regard to the policy in which the researcher recommended.

5.4 Recommendations

- ❖ The entity should establish a committee and have a senior supervisor to help in the implementation of the SHE policy. The committee should further explain to the employees on the requirements of the SHE policy and clarifying on the objectives of the policy. Benefits to accrue from compliance by both employees and management should be clearly spelt out. It is supported by Drummond and Jefferson (1996), who postulated that for a sound SHE policy implementation to be achieved, a good understanding and participation by the workers on how, why and when to implement these policies is required.
- ❖ Windmill Ltd should make available financial resources to the SHE committee for the success implementation of the policy. It should adequately channel its financial resources for the betterment safety of its workforce. The management should put in place financial usage guidelines so that SHE officers and implementers work within limits on the amounts to be spent on given SHE projects.
- ❖ The company should put in place adequate penalties for any violation of the SHE laws. Wanda Thibodeaux (2014) argued that a company should create a clear set of disciplinary actions such as suspension or docked pay for managers who do not follow given policies and procedures. In the CFI Industries SHE policy, it is stated that anyone who violates the SHE policy may be subject to discipline by the company, upto or including termination of employment.
- ❖ There should be segregation at Windmill in terms of the levels of authorization on SHE expenditures as a measure to control unnecessary expenditures. Managers of different departments of different management levels should authorize different amounts of expenditure. It is emphasized by the U.S Department of Interior (2010) that managers and supervisors should accept delegation at each level with sufficient authority to plan for funds for necessary materials required and SHE staff training. This may reduce the risk of misappropriation of funds and manipulation of data is minimized.
- ❖ Responsibilities should be clearly defined including those that work on behalf of the organisation as subcontractors and sub consultants to reduce the risk of duplication of tasks, wasting of resources and conflicts amongst workers. This helps to achieve the best SHE policy as supported by the GHD GROUP SHE policy.
- ❖ There should be designed safety principles that encompass the full product life cycle, risk management processes and legal requirements should be clearly stated in the SHE

policy. Dryzek and Scholsberg (2005) argued that for a best SHE policy to be achieved, the right to participate as equal partners at every decision making level should be established and there should be an internal review of the continual improvement.

- ❖ The entity SHE department should adequately budget for their programs and should try all means not to overspend rather they should under spend. The entity also should employ the Macgregor theory of motivation as it is an essential ingredient to achieve highest levels of productivity. It should introduce competitions for all employees on SHE related issues and awarding best SHE standards compliers. The entity should also carry out special seminars and training for illiterate and less educated staff. The Republic of Ireland Health and Safety Authority (2006) agreed to this since it emphasized that specific training results in good judgement of situations and employees achieve competence in the job.

5.5 Areas for Further Study

The researcher recommends a further study on the SHE cost structures in manufacturing industries and special attention also to be paid to the SHE cost-benefits analysis.

5.6 Summary

This chapter looked at the summary of chapters, major findings, conclusion, recommendations to Windmill Ltd and areas for further study.

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Appendices

APPENDIX I: COVER LETTER

Midlands State
Established 2000 University



Midlands State University

Faculty of Commerce

Department of Accounting

P O Box 9055

Gweru

08 September 2014

Dear Sir

RE: APPLICATION FOR AUTHORITY TO CARRY OUT A RESEARCH

I am a fourth year student at Midlands State University and I am seek your authority to carry out a research on the” **SHE cost structures at Windmill**”. The research is carried out in partial fulfilment of the Bachelor of Commerce Honors Degree in Accounting, the researcher is currently undertaking.

I am kindly asking for your co-operation in the completion of questionnaires attached to this letter. The information you provide will be confidential and will be used for academic purposes only.

Your cooperation is greatly appreciated

Yours faithfully

Patience Chabhara
R112366A

APPENDIX II: QUESTIONNAIRE



Research Project Questionnaire

Questionnaire for Windmill Pvt Ltd Management and Employees

An investigation of the SHE cost structures at Windmill (Pvt) (Ltd) for the period 2010-2013.

Instructions

- 1. Do not write your name on the questionnaire.**
- 2. Show response by ticking the respective answer box and fill in the relevant spaces provided.**

Questions

Section A: Personal Questions

1. Gender: Male Female

2. Department

HR Finance SHE Production Purchasing

Research and Development

Others (specify).....

3. You have been in the department for:

Less than 1yr 1-5yrs 6-10yrs More than 10yrs

4. Academic qualification

'A' Level Diploma Degree Masters Doctorate

Others (specify)

.....

Section B: Windmill SHE Policy.

5. Overview of Windmill SHE policy

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i) Windmill has a SHE policy.					
(ii) The policy is formally documented.					
(iii) All subordinates are aware of the SHE policy					
(iv) The SHE policy provides an opportunity for induction to new personnel					
(v) Explanations are given to employees for better understanding on SHE policy.					

6. SHE Policy implementation guidelines

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i) There is SHE policy implementation guidelines at Windmill.					
(ii) The SHE policy is viable					
(iii) SHE programs are adequately budgeted for.					
(iv) The policy implementation guidelines are properly documented.					

7. Adequacy of personnel to implement SHE Policy

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i) There is a SHE representative in every department.					
(ii) A Senior SHE supervisor helps the committee in implementing the policy.					
(iii) Windmill retrains its SHE personnel for new developments in the SHE programs.					
(iii) Financial resources are accessible to help the Committee to implement the policy					

(iv)All Windmill employees undergo SHE re-induction after a certain period.					
(v)A First Aid team is reserved for any safety and health emergencies.					

8 The following are some of the SHE Policy implementation challenges experienced to date

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i) Employee resistance.					
(ii)Lack of adequate time to implement the policy.					
(iii) Weak management of industry dynamics.					
(iv)Lack of qualified personnel.					
v) Lack of adequate financial resources.					
vi) Lack of understanding of objectives.					
(vii)Imperfect communication.					
viii) Changes in the regulatory environment.					
(ix) Inadequate information dissemination.					

Any other (specify).....

9 Controls put in place by Windmill to ensure compliance with the SHE policy

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i)SHE policy is clearly posted and available to employees.					
(ii)There is a common database for hazardous material safety information (eg, melting point, boiling point, toxicity, storage and disposals, etc)					
(iii)There are adequate penalties for violation of SHE laws and regulations in force.					
(iv)Audit mechanisms are established to test and authenticate SHE systems.					
(v)Personnel are held accountable for completing tasks according to SHE performance standards.					

vi)Regular SHE meetings are conducted, either weekly or fortnightly.					
(vii)There are different levels of authorization limits on certain levels of SHE expenditure.					
(viii) There are disciplinary actions such as suspension or docked pay for managers who do not follow SHE procedures.					

Any other (specify).....

10 The best SHE policy for Windmill Ltd

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i)Responsibilities should be clearly defined.					
(ii)The right to participate as equal partners at every decision making level should be established.					
(iii)Legal requirements clearly stated.					
(iv)Risk management processes.					
(v)Consultative mechanisms and proactive communication.					
(vi) Designed safety principles that encompass the full project lifecycle.					

Any other (specify).....

.....

APPENDIX III: INTERVIEW GUIDE



Interview guide

I am kindly in quest of your views and comments to the following questions relating to the firm's SHE cost structures. Information and views provided is regarded as confidential and is used only for academic purposes. Your extreme assistance is greatly appreciated.

Questions

1. What is the SHE policy for Windmill Ltd?
2. Are there any SHE policy implementation guidelines?
3. What are the SHE implementation guidelines?
4. Is there adequate personnel to implement the SHE policy?
5. What implementation challenges are being faced by Windmill Ltd?
6. What measures has been put in place to address implementation challenges?
7. What controls have been put in place to ensure compliance with the SHE policy?
8. Are the controls effective?
9. What could be the possible reasons for employee non-compliance with the SHE policy?
10. Are there any identified loopholes on the SHE policy for Windmill Ltd?
11. Are there designed safety principles that encompass the full product lifecycle?
12. What do you think would be the best SHE policy for Windmill Ltd?