Evaluating Management Perceptions of the Occupational Health and Safety System in a Steel Manufacturing firm in Johannesburg, South Africa

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ABSTRACT
This study focuses on evaluating management’s perception of the occupational health and safety system used within the steel manufacturing firm. It investigates how management perceives their role as managers, how management interprets and enacts their role as managers and how this in turn impacts on occupational health and safety in the workplace.

Management should be contributing to the improvement of workplace health and safety within the steel manufacturing firm. However, managers each have a different interpretation of the purpose, which influences the way they perceive their role in workplace health and safety. The same scenario applies to the employees on the floor level, as the Occupational Health and Safety Act No. 85 of 1993 details the responsibilities of both the employer and the employees. Management’s commitment and compliance with health and safety will be evaluated in order to examine the health and safety standards in this workplace.

Quantitative data was collected using questionnaires. The random sampling technique was used with a sample size of 55 participants. These participants were sub grouped into different categories such as senior managers,
line managers, safety health and environmental officer, laboratory management, health and safety representatives, artisans, and machine operators.

The findings revealed that there is a strong relationship between management’s perceptions and safety in the workplace. It was found that the human factor (behaviour) can have a huge impact on safety performance within the plant.

**Key Words:** Management; Perceptions; Occupational Health; Safety; System; Performance; Compliance; Commitment; Workplace, Manufacturing; Standards

### Introduction

This study contributes to the growing understanding of management perception and participation in occupational health and safety, by focusing on the role that management plays in the fulfilment of health and safety requirements within a metal manufacturing firm in Johannesburg. Like all South African companies, this Steel Manufacturing firm employs the globally accepted OHSAS 18001 regulatory standard for safety and health administration in the workplace. The OHSAS 18001 workplace regulation runs parallel to ISO 18001 standards. ISO 18001, as an administrative tool, is declared to be an ideal tool for occupational safety and health management worldwide in various industrial companies. In conjunction, the OHSA No. 85 of 1993 is in place to provide health and safety of persons at work and for the health and safety of persons connected with the use of plants and machinery, the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work, to establish an advisory council for occupational health and safety and to provide for matters connected there with.

Hattingh and Acutt (2009:14), specialists in occupational health and safety, state that occupational health is concerned with the relationship between work and health and was defined in 1950 by a joint committee of ILO and the WHO as being concerned with:

- The promotion and maintenance of the highest degree of the physical, mental and social well-being of the workers in all occupations.
- The prevention among workers of departures from health caused their working conditions.
- The protection of workers in their employment from risks resulting from factors adverse to health.
- The placing and maintenance of the worker in an occupational environment adapted to his/her physical and psychological state.

Through the experience gathered at the Steel Manufacturing firm, it was observed that there are pitfalls/ gaps between the required health and safety management system and the actual health and safety performance system. As a result of these shortcomings there have been multiple health and safety injuries within the plant. It was also discovered there is no sense of urgency in addressing safety concerns. For example, health and safety injuries are not investigated on time in order to put corrective measures in place or to prevent the same incident from repeating again.
The OHSA states that it is the duty of the employer (management) to provide and maintain as far as reasonable practicable a working environment that is safe and without risk to the health of the employees. Major hazards identified at the Steel Manufacturing Firm are as follows:

- Lifting equipment/overhead cranes
- Hot metal and cobbles in the mill
- Vehicles: trucks and fork lifts
- Stacking and storage.

The study has the following objectives:

- To assess management’s level of understanding of the OHSMS implemented.
- To evaluate management’s level of vigilance in ensuring health and safety in the workplace.
- To investigate management’s attitudes towards occupational health and safety management system.
- To assess management’s compliance with the occupational health and safety management system.

**LITERATURE REVIEW**

OHS is often referred to as an important resource for companies in their ambition to create a good working environment. Health and Safety in the workplace is very important to ensure that an organisation provides a safe working environment for its employees and to minimise the risk of accidents and injuries. Health and Safety should be a joint responsibility between the company, management and employees. They should possess the skills to identify and describe the relationships between the work environment, organisation, productivity and health. The literature review will cover the OHSA No. 85 of 1993 and the Management Safety System.

Bennet (2002) argues that when it comes to the workers’ opinions on health and safety, they are often ignored due to various management styles (certain management styles do not take into account the views and opinions of workers) and a lack of an adequate health and safety policy. This allows for very little or no reflection for worker contribution to health and safety within the organisation. Workers often find themselves compelled to simply follow the rules and policies of the organisation as these policies have already been put in place. Bennet believes that workers’ perceptions on the subject are seldom considered.

The following topics will be explored in this literature review: The responsibilities of the employer according to the OHSA No. 85 of 1993; healthy workplace framework, leadership styles, management’s commitment and compliance to health and safety.

**Occupational Health and Safety: Act No. 85 of 1993**

The discipline of occupational health is concerned with the relationship between work and health and was defined in 1950 by a joint committee of the international labour office and the WHO as being concerned with:

- The promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations;
The prevention among workers departures from health caused by their working conditions;

The protection of workers in their employment of risk resulting from factors adverse to health;

And the placing and maintenance of the worker in an occupational environment adapted to his/her physiological and psychological state.

Hattingh and Acutt (2009:14)

Duties of employees

According to OHS Act No. 85 of 1993, health and safety is not only the employer’s responsibility but also responsibility of the employees. According to OHSACT section 14, the general duties of employees at work are as follows:

- Every employee shall at work take reasonably care and safety of themselves and of other persons who may be affected by his act or omissions.
- Employee shall work together with their employer to enable duties or requirement by the OHSACT to be accomplished
- Carry out any lawful order given to you and obey the health and safety rules, and procedures laid down by his employer or by any one authorised by his employer in the interest of health and safety.
- If any situation which is unsafe or unhealthy comes to his attention, the employee must report it as soon as practicable possible, to his employer or to the health and safety representative at the workplace or section thereof, who shall report it to the employer.
- If he is involved in any incident which may affect his health or which has caused injuries to himself, he must report such incidents. (NOSA, 2011:8)

Section 15 of OHSACT states that no person shall intentionally or recklessly interfere with, damage or misuse anything which is provided by the employer, this is in the interest of health and safety (NOSA, 2011:8).

According to section 16 of the Act, chief executive officers are charged with the following duties:

- Section 16(1) states that every CEO shall as far as it is reasonable practicable ensure that the duties of his employer as contemplated in the act, are properly discharged.
- Section 16(2) requires that without derogating from CEO responsibility or liability in terms of section 16(1) above it is stated that the CEO may assign health and safety related duties to any person under his control, which person shall act subject to the control and direction of the CEO. The act further state that for the purpose of section 16(1) the head of department of any department of the states shall be deemed to be CEO of that department (NOSA, 2011:8).

The reason that the act mentions the duties of 16(1) and 16(2) is to make sure that the health and safety management system is working correctly, in accordance to the act and to make sure that the above section 16(1) and 16(1)’s responsibilities are clearly stated and explained for every role player/ every individual who is involved in making the occupation health and safety management system functional and successful (NOSA, 2011:8).
Background of the OHSAS (Occupational Health and Safety Assessment Series)

Awwad (2001:1) states that the Occupational Health and Safety Assessment Series specification OHSAS 18001, have been developed as a recognisable occupational health and safety management system standard against which management systems can be assessed and certified. OHSAS 18001 is compatible with the ISO 9001 (Quality) and ISO 14001 (Environmental) management systems standards, which facilitates the integration of quality, environmental and occupational health and safety management systems by organisations. This publication presents a study that compared the specifications of three standards/guidelines for the management of occupational health and safety, namely: OHSAS 18001, the ILO guidelines, and Oregon state OSHA guidelines. The three standards had a high consistency, an agreement on generalities, and little differences in regards to some details, however OR-OSHA included more details to guarantee the effectiveness and practicality of the safety management system. It was concluded that integration of the requirements of OHSAS, ILO, and OR-OSHA will lead to a comprehensive, practical, clear and easy to implement safety management system. OHSAS 18001 is intended to help an organisation to control occupational health and safety risks (Awwad, 2001:1).

As mentioned by Awwad (2001:3) that fundamental to any safety management system is to identify hazards, assess risk and prioritize it, and implement controls to reduce unacceptable risks. All three systems specify clear requirements for hazard identification, risk assessment, and risk control; however the three systems vary in the level details specified. The effective of any SMS is highly dependent on the system’s ability to comprehensively identify all hazards (Awwad, 2001:3).

The literature on occupational health and safety management that was previously conducted in different countries reveals that safety, health and the environment has become an integral component to the viability of business for employers, labour unions, governments and environments in general. Naturally a need for safety is an intrinsically human concern (Macintosh and Gough, 1998:1). Zwetsloot (2003) states that the OHSAS 18001 safety and health standard has proved to be an effective standard that continues to gain popularity in well established businesses all over the world. It helps bring about dramatic changes in many companies whose practices are now geared towards zero tolerance of health and safety hazards in conducting their business (Zwetsloot, 2003). Meanwhile Author O’Connel (2004) has supported the theory suggested by Zwetsloot (2003), which states that the benefits that are derived from complying with the OHSAS 18001 regulation have proved to be very attractive to progressive organisations all over the World (O’Connel, 2004).

The standard helps to form an all embracing protective measure for the safety of the workers and makes provision for the evaluation of the success of its implementation (O’Connel, 2004).

Model and Framework for a Healthy Workplace

Below is the model and framework for a healthy workplace that the WHO has developed. It includes both the content of a healthy workplace programme in the form of four avenues of influence, and the suggested continual improvement process. The four avenues are represented by the four bullets below, in the proposed WHO definition of a healthy workplace. The eight steps in the continual improvement process are summarised as
Mobilise, Assemble, Assess, Prioritise, Plan, Do, Evaluate, Improve. The framework and model presented here include both content and process, and may be implemented by any workplace of any size, in any country. There is no “one-size-fits-all” and each enterprise must adapt these recommendations to their own workplace, their own culture and their own country (Burton 2010:2).

Figure 2.1 ES1 WHO Model

(Source: Burton 2010:3)

The WHO model and framework outlined bring together the principles and common factors that appear to be universally supported in the literature and in the perceptions of experts and practitioners in the fields of health, safety and organisational health (Burton 2010:1).

Burton (2010: 5) believes that to develop a healthy workplace framework the following should be kept in mind:

- **It is the Right Thing to Do: Business Ethics**
  Every major religion and philosophy since the beginning of time has stressed the importance of a personal moral code to define interactions with others. The most basic of ethical principles deals with avoiding doing harm to others.

- **It is the Smart Thing To Do: The Business Case**
  The second reason for the importance of creating healthy workplaces is business argument. It looks at the hard, cold facts of economics and money. Most private sector enterprises are in business to make money. Non-profit organisations and institutions are in business to be successful at achieving their missions. All these workplaces require workers in order to achieve their goals, and there is a strong business case to be made for ensuring that workers are mentally and physically healthy through health protection and promotion. (Burton 2010:6). The business case is presented hereunder:
Figure 2.2 Business Case in a Nutshell.

Figure 2.2 above summarises the evidence for the business case. This is expanded upon at length in demonstrating that in the long term, the most successful and competitive companies are those that have the best health and safety records, and the most physical and mentally healthy and satisfied workers. (Burton, 2010:6)

- **It is the Legal Thing to Do: The Law**

  Most countries have some legislation requiring, at a minimum, that employers protect workers from hazards in the workplace that could cause injury or illness. In South Africa, the OHSA no. 85 of 1993 is a guideline that is used to ensure that situations are managed and treated in the correct manner (Burton, 2010:7)
Work Related Injuries

In November 2006, Bobby Godsell, CEO of AngloGold Ashanti, was quoted as saying that there is no reason that the risk of harm should be greater in mining than it is in any other form of economic activity, and that while all human action involves a measure of risk, the challenge is to identify, understand and then manage this risk. Godsell said that the successful management of health and safety risks in mining requires good science to identify and understand the nature of risks in mining:
engineering to remove or reduce the risks; and creating values, habits and behaviours which make every worker an effective manager of health and safety risk. But in 2006, he reported that AngloGold Ashanti had seen a disturbing regression in that progress in regard to accidents on its South African mines and that these reversals had deepened the company’s determination to regain the trend evident over the past 10 years (Godsell, 2006:1)

In total, 37 people had died as a result of injuries sustained at work at AngloGold Ashanti during 2006, 32 of these deaths at their operations in South Africa. In 2005, 25 employees lost their lives in work-related accidents, 17 of whom were in South Africa. Comparing the FIFR year-on-year shows a significant increase in the frequency of fatal accidents in the South Africa operations, from 0.17 in 2005 to 0.35 in 2006 (Godsell, 2006:1).

Alli (2008: 3) states that the human, social and economic costs of occupational accidents, injuries and diseases and major industrial disasters have long been cause for concern at all levels starting from the individual workplace to national and international levels. Measures and strategies designed to prevent, control, reduce or eliminate occupational hazards and risks have been developed and applied continuously over the years to keep pace with technological and economic changes. Yet, despite continuous but slow improvements, occupational accidents and diseases are still too frequent and their cost in terms of human suffering and economic burden continues to be significant.

A recent ILO report estimated that 2 million occupational fatalities occur across the world every year, the highest proportions of these deaths being caused by work-related cancers, circulatory and cerebrovascular diseases, and some communicable diseases. The overall annual rate of occupational accidents, fatal and non-fatal, is estimated at 270 million Härmäläinen, Takala and Saarela (2006). Some 160 million workers suffer from work-related diseases and about two-thirds of those are away from work for four working days or longer as a result. After work-related cancers, circulatory diseases and certain communicable diseases, accidental occupational injuries are the fourth main cause of work related fatalities. Recent data from the ILO and from the WHO indicate that overall occupational accidents and disease rates are slowly declining in most industrialised countries but are level or increasing in developing and industrialising countries (Alli, 2008: 3)

**Figure 2.6 Anglogold Ashanti Stats (death)**

![Number of people died in Anglogold Ashanti](Source: Godsell, 2006:1)
According to the ESAW, every year in the 15 member States of the EU before the enlargements of 2004 and 2007 about 5,000 workers were killed in accidents at work and about 5 million workers were victims of accidents at work leading to more than three days’ absence from work (EU, 2004).

- In India and China, the rates of occupational fatalities and accidents are similar at, respectively, 10.4 and 10.5 per 100,000 for fatalities, 8,700 and 8,028 for accidents.
- In sub-Saharan Africa, the fatality rate per 100,000 workers is 21 and the accident rate 16,000. This means that each year 54,000 workers die and 42 million work-related accidents take place that cause at least three days’ absence from work.
- In Latin America and the Caribbean, about 30,000 fatalities occur each year and 22.6 million occupational accidents cause at least three days’ absence from work. (Alli, 2008: 4)

The economic costs of these injuries and deaths are colossal, at the enterprise, national and global levels. Taking into account compensation, lost working time, interruption of production, training and retraining, medical expenses, and so on, estimates of these losses are routinely put at roughly 4 per cent of global GNP every year, and possibly much more. Overall spending on compensation for a group of OECD countries was estimated at US$122 Billion for 1997 alone, with 500 million working days lost as a result of accidents or health problems. (Alli, 2008: 4)

Figure 2.8 Work Fatality

(Source: Alli, 2008: 4)
According to Burton (2010:7) the ILO notes that, “Women’s safety and health problems are frequently ignored or not accurately reflected in research and data collection.” Burton (2010:7) believes that occupational safety and health inquiries seem to pay more attention to problems relating to male-dominated work, and the data collected by OSH institutions and research often fail to reflect adequately the illnesses and injuries that women experience. In recent years, globalisation has played a major role in workplace conditions. While international expansion provides an opportunity for multinational corporations to export their good practices from the developed world into developing nations, all too often the reverse is true. Short term financial gains often motivate multinationals to export the worst of their working conditions, putting countless numbers of children, women and men at risk in developing nations (Burton, 2010:7).

In 1995, the World Health Assembly of the WHO endorsed the Global Strategy on Occupational Health for All. The strategy emphasised the importance of primary prevention and encouraged countries with guidance and support from WHO and ILO to establish national policies and programmes with the required infrastructures and resources for occupational health. Ten years later, a country survey revealed that improvements in healthy workplace approaches were minimal and further improvement was required. (Burton, 2010:8)

In May 2007, the World Health Assembly endorsed the Global Plan of Action on Workers Health (GPA) for the period 2008-2017 with the aim to move from strategy to action and to provide new impetus for action by Member States (Burton, 2010:8). The GPA provides a political framework for the development of policies, infrastructure, technologies and partnerships for linking occupational health with public health to achieve a basic level of health for all workers. It calls on all countries to develop national plans and strategies for its implementation. As such, nations and enterprises look to WHO for some guidance in wading through the overabundance of information and recommendations. Therefore, under Objective 2, the WHO has a Healthy Workplace Framework and Model (Burton, 2010:8). This framework was developed with associated guidance for a healthy workplace. By raising this as a global issue, WHO has hopes of getting a ‘critical mass’ in the movement towards healthy workplaces to create a tipping point. If sufficient countries ‘sign up’ for healthy workplaces, then:

• Countries can get encouragement and practical help from one another; learn from one another’s good practices;
• Poor practices in some countries will not be an excuse for poor practices in others, in the name of ‘fair competition’; and
• There will be national ‘peer pressure’ between nations and enterprises, as it becomes more and more the norm to have healthy workplaces that go far beyond legal minimums. (Burton, 2010:9).

**Systems for Identifying, Evaluating, and Controlling Hazards**

Occupational health and safety hazards and risks cannot be effectively identified, evaluated, or controlled unless the facility maintains a system for hazard identification, evaluation, and control. The system should be standardized for the entire health care facility to ensure that there will be no confusion about managing the occupational hazards and risks. The occupational health and safety action plan should outline the details of the
procedures that the personnel and administration must follow to identify, evaluate, and control hazards in their work environment. (PAHO, 2006:29)

**Hazard Identification**

Comprehensive hazard identification is the basis for the prevention of human or equipment damage or loss and interruption of processes.

The initial hazard identification makes it possible to:

- Identify pertinent and important hazards in the health care process
- Establish appropriate controls
- Define objectives for training and information needs
- Clearly define the responsibilities of management, supervisors, and workers; and
- Draft and implement comprehensive work standards and integrated practices, including emergency procedures.

(PAHO, 2006:29)

**The methods of hazard identification**

Method of hazard identification includes:

- Area-specific identification based on the division of the workplace into identifiable areas.
- Task-specific identification of hazards by each step in the task
- Process-specific identification of hazards at each process stage and
- Job-specific identification of the hazards by stage in the process.

None of the above methods is unique or ideal for hazard identification. The preferred system depends on the type of services rendered, the processes involved. A combination of methods may therefore be the best choice. Existing resources such as codes of practice and guidelines, health and safety information booklets, reports from inspectors or consultants, and environmental health reports should be used to identify hazards. Registries of accidents, diseases, and absenteeism, are important sources of information. As health hazards in the workplace are identified, decisions should be made to immediately set up measures to control priority hazards or introduce control methods to reduce or eliminate the likelihood of injury from hazards that are not considered priorities. (PAHO, 2006:29)

**Hazard Control**

Hazards that have been identified and assessed as priorities require the employer to implement adequate control measures.

Control measures should follow the hierarchy described below, with a strong emphasis on eliminating hazards at the source, whenever possible.

- Take all feasible measures to eliminate the hazard. For example, by substituting or modifying the process.
- If elimination is impractical or remains incomplete, take all feasible measures to isolate the hazard. For example, instituting engineering controls such as insulating noise.
If it is totally impossible to eliminate or isolate the hazard, its likelihood to cause injury should be minimized. This effort should include ensuring that effective control measures are being applied, such as installing proper exhaust ventilation, providing personal protective clothing, equipment that is properly used and maintained and monitoring exposure among at-risk workers. (PAHO, 2006:29)

Bennet (2002:1) argues that when it comes to workers’ views on occupational safety and health in the workplace they are often ignored due to various management styles and a shortage of safety regulations, allowing for little reflection for worker contribution. Workers as subordinates often find themselves compelled to simply comply with and submit to rules and policies already in place at the workplace. Bennet (2002:1) believes that workers’ perceptions on the subject are seldom considered. He states that in many industries, the plight of workers is left in the hands of health and safety professionals, industrial hygienists, academics and industrial managers.

Bennet (2002:1) argues that the concerns of safety and health management are aspirations arranged in point form to be met by management as envisaged goals. Bennet (2002:1) argues that management systems are always silent as to how safety and health at the workplace looks like, how it is structured, how it functions, how it relates to the management of the enterprise in general and how it is reconciled with the functions and responsibilities of other parties. He further asserts that the workers are not objects to be managed like machines or other factors of production. They are living, breathing and thinking human beings who have the most fundamental stake in any system of health and safety that affects their lives in the workplaces.

**Leadership**

Leadership is related to safety climate and plays a significant role in safety performance. Supervisors who engage in safe practices tend to have positive safety climates in their unit, particularly when they exhibit transformational leadership (Zohar and Luria, 2004: 322).

Safety specific transformational leadership is characterised by managers who convey safety as a core value through their own commitment and behaviour, and who challenge subordinates to go beyond individual safety needs for the collective good. Transformational leaders also show a genuine interest in their followers’ well-being, which may inspire employees to prioritise their own safety. Safety-specific transformational leadership has been found to predict occupational injuries, with perceived safety climate mediating this effect (Barling, Loughlin and Kelloway, 2002: 488).

Leadership training is also associated with significant increases in safety performance, suggesting that leadership skills with respect to safety can be developed within the organisation (Zohar, 2002: 156). These studies provide strong evidence that leader training and behaviour are strong factors in the safety performance of the workgroup. Safety climate continues to be a popular topic among safety researchers and this is for good reason. It has been a relatively robust predictor of safety performance and it points to the role of the situation at the organisational level in the behaviour of individual employees. More work is needed to understand the antecedents of safety climate.
Zohar (2003: 123) implies that safety climate results from formal organisational policies and practices as well as supervisor communication. However, to this point there has been very little empirical work looking at organisational-level predictors of safety climate, which could include actual organisational policies and practices. Although there is not necessarily a one-to-one correspondence between actual organisational policies, practices, and procedures and perceptions of them, it would be useful for theory and practice to know what types of policies are most likely to enhance safety climate.

**Basic Concepts of Occupational Health and Safety Management**

The employer should have overall responsibility for the protection of workers’ safety and health, and provide leadership for occupational safety and health activities in the organisation. There already are model programs that improve health and decrease costs. It is not knowledge that is lacking, but penetration of those programs into a greater number of settings (PAHO, 2006: 15).

**Management Commitment**

![Figure 2.9 Management Commitment](image)


According to PAHO published in 2006 it is stated that the most effective strategy for managing health and safety in the health services, and for providing health care is to incorporate occupational health and safety into an institution’s managerial objectives. Handling health and safety objectives in the same way as objectives dealing with finances, the services, or quality are handled will help attain a high performance standard in health and safety.

It is management’s responsibility to ensure that the health care facility under its responsibility establishes adequate policies and programs supplied with sufficient human and financial resources to provide a healthy and safe workplace.

**Management’s Duties and Responsibilities**

If necessary, one or more persons from top management should be given the responsibility, authority, and duty to collaborate with workers’ representatives to:

- develop, apply, and periodically monitor and evaluate the occupational health and safety management system;
- Periodically report on the operation of the occupational health and safety management system to the highest management level; and
- Promote the participation of all members of the organisation.
  The extent to which employee activities are channelled toward a common goal depends on the extent of
  the administration’s commitment and participation. In addition to directed activities carried out by the
  director or by persons specifically assigned to the health care facility’s occupational health and safety
  management system, other top-management actions (in various areas) will demonstrate the support of
  the leaders to the management of occupational health and safety. (PAHO, 2006:7)
  For example:
- conduct regular worksite visits to communicate with workers and identify deficiencies to be resolved;
- promote and participate in regular meetings specifically held to discuss safety and
  health issues or introduces the discussion of these issues in regular daily meetings;
- observe if and how workers adopt work routines that could have serious consequences and set up a
dialogue to discuss alternative ways of performing work;
- Show an interest in the causes of occupational accidents and in how they have been taken care of. After
  an accident, assure workers that management cares for them, especially while victims are recovering;
- serve as an example by using personal protective equipment in work areas that require it and always
  respect existing prevention standards;
- adopt a participatory leadership and heed the opinions of the members of the
  organisation as a way to establish the necessary confidence;
- establish and foster an organizational structure that supports activities of the risk
  prevention and risk control programs; and
- secure the necessary financial and human resources to ensure that the occupational
  health and safety system functions well (PAHO, 2006:7).

**Communicating the Safety Massage**

Spoken and written communication can be critical in maintaining safety. This can include general
communications in the form of safety information, communications between team members or between
different teams during operations or maintenance work, and emergency communications. All personnel
including employees, contractors and visitors, should have access to key information to help them negotiate the
hazards in the work place safely. This may include key findings from risk assessments, induction to site,
evacuation drills, emergency instructions, and safety warnings. [Http://www.hse.gov.uk/human
factors/topics/communications.htm](http://www.hse.gov.uk/humanfactors/topics/communications.htm)

**RESEARCH METHODOLOGY**

This section focuses on the research process utilised in the collection of data. The key aspects covered in this
chapter are the research methodologies, the sampling strategies, the instrument for the data collection and how
the data analysis was processed. This chapter provides an overview of other important areas that need to be
considered when undertaking research. Welman and Kruger (2005:2) define research as a process that involves
obtaining scientific knowledge by means of various objective methods and procedures. Saunders, Lewis and
Thornhill (2009:5) propose that research is something that people undertake in order to find out things in a systematic way, thereby increasing their knowledge.

**Target Population**

According to McMillan and Schumacher (2006:11), a population is a group of elements or cases, whether individuals, objects, or events that conform to specific criteria and to which the study intends to generalize the results of the research. Furthermore, this group is also referred to as the target population or universe. The target population was 250 employees and the sample size was 55.

**RESULTS, DISCUSSION AND INTERPRETATION OF THE FINDINGS**

The following section details the results obtained following the data collected from the sampled group of participants. The results are designated, interpreted, and discussed according to the following dimensions: (1) employment categories of the participants, (2) management’s understanding of the Occupational Health and Safety Act, (3) management’s level of vigilance, (4) management’s attitudes towards health and safety measures, (5) taking ownership of occupational health and safety measures, (6) management’s safety compliance, (7) leadership in the plant towards safety, (8) communication, and (9) organisational safety culture. Descriptive statistics encompassing graphically presented percentile responses are reported within each section.

**Employment Categories of Participants**

Based on the delineated target population, a sample of 55 participants was selected for participation in the present study. The categories of the participants and the percentages of participants within each domain are outlined below (see Figure 4.2). The highest percentages of participants included Line Managers (20%) and Machine Operators (20%). In addition, other management personnel were represented in various segments of the organisation. The inclusion of these participants denotes the appropriate representation of management individuals within the company. In addition, the inclusion of machine operators and artisans enables a complete, thorough, and unbiased evaluation of the concepts and factors, particularly health and safety compliance, vigilance, and attitudes, associated with the present study. The breadth of employees that were included in the current study suggests that the participants embody an appropriate representativeness of the target population.

**Figure 4.1 Percentages of Participants’ in Targeted Employment Categories.**
Management’s Understanding of the Occupational Health and Safety Act

The subsequent section assesses the participants’ perceptions pertaining to management’s level of knowledge and understanding of the Occupational Health and Safety Act. The respondents’ appraisals of each item are presented in separate visual indicators, as outlined below.

Figure 4.2: Item 1 OHSAS Specification

The OHSAS specification has been developed as a recognisable occupational health and safety management standard.

Based on Figure 4.2, it is evident that most of the participants either agree (45.5%) or strongly agree (32.7%) that the OHSAS specification has been developed as a recognisable occupational health and safety management standard against which management can be assessed and certified. Thus, the OHSAS appears to be critical to ensuring that management is aware of and obtain the knowledge pertaining to health and safety issues that may experienced by organisations, particularly manufacturing companies. As a result, managers are more likely to be knowledgeable and enforce or implement appropriate measures to safeguard employees from health and safety hazards and, due to the specified and required standards, are more likely to be accountable and responsible when such measures are not implemented and health and safety issues arise.

Figure 4.3: Item 2 Duties of Employer

The duties of the employer to the employees are to provide and maintain a safe working environment.
As evidenced in Figure 4.3, the participants’ indicated an overwhelming agreement or strong agreement that it is part of the employer’s duties to provide employees with and maintain a safe working environment. Thus, managerial personnel and employees (e.g., artisans) tend to agree that the company is responsible for implementing the appropriate measures for ensuring the safety of employees. Perhaps, this indicates that the employees and management in particular, are aware of the OHS Act regulations that govern organisations. On the other hand, perhaps it is implicitly surmised that a company is responsible for provisioning for the health and safety of employees. Regardless, the findings denote that the managerial personnel acknowledge that the responsibility for health and safety within the organisation rests with the company. Thus, if an incident occurs due to inadequate health and safety measures, the relevant authorities are well aware that the organisation is culpable for the incident.

**Figure 4.4: Item 3 Management’s Duty**

Management’s duty is to provide and maintain work systems and plant machinery that is free of risk.

In a similar manner to the previous item, Figure 4.4 denotes that the participants all strongly agree or agree that
management’s duty is to provide and maintain work systems and plant machinery that is free of risk. Perhaps, this relates to the notion that organisation’s are responsible for providing and maintaining a safe working environment. That is, if work-related systems and plant machinery are inadequately maintained and pose a risk to employees, the organisation is unlikely to provide a risk-free working environment. The findings also suggest that both employees and managerial individuals are equally aware and knowledgeable regarding the requisite of organisations to the maintain work systems and plant machinery to minimise or limit risk. This may also reflect the effectiveness of the OHS Act in disseminating occupational health and safety regulations and requirements across management and employees.

**Figure 4.5: Item 4 OHSAS's Intention**

The OHSAS is intended to help an organisation control occupational health and safety risk.

![Chart](image.png)

Figure 4.5 indicates that the majority of the respondents’ agree or strongly agree that the OHSAS intends to assist organisations control occupational health and safety risks. Therefore, both employees and managerial personnel are well aware that the OHSAS has been implemented to promote occupational health and safety, increase knowledge pertaining to health and safety, and, perhaps, reduce the number of unforeseen incidents within organisations. Considering most of the participants responded in a highly similar manner, the OHSAS appears to be achieving its purpose of improving occupational health and safety knowledge, application, and purposes.

**Figure 4.6: Item 5 Purpose of OHSAS**

The main purpose of the OHS Act is a proactive attempt to provide and maintain a safe and healthy working environment.
Overwhelmingly, 85.5% of the participants indicated they either agree or strongly agree that the primary purpose of the OHS Act is to provide and maintain healthy and safe employment environments. Thus, not only are participants aware that the OHSAS is in place to assist organisations promote the health and safety of organisations (see Figure 4.5), but they also appear to be conscious of the primary objective of the OHS Act. This is extremely important to the application of any regulation, as a misunderstanding of the purpose of legislature may result in the absence of its application or misapplication. Considering the participants tended to display similar perceptions regarding their understanding of the purpose of the OHS Act, it appears that both employees and managers are likely to work harmoniously to achieving the purpose of the OHS Act.

Figure 4.7: Item 6 Procedures Retention Period

The retention period for the safety procedure is one year.

Although the largest proportion of the respondents’ (41.8%) indicated agreement that the retention period for the safety procedure is one year, a substantial percentage of the respondents’ denoted they were undecided (29.1%)
and disagreed (21.8%) regarding the one year retention of the safety procedure. The discrepancies indicate a lack of clarity and confusion among the participants. Regardless of whether the employees and managerial staff have been inadequately informed about the retention period of the safety period or whether they have been inattentive to attaining this information, the variance in knowledge and understanding may pose problems for the organisation. In particular, an employee that is not aware that the safety procedures are not retained for longer than one year and may be amended following this period may not actively seek or obtain the information relating to any changes that are made to the procedures. Foreseeable, this may result in a number of potentially hazardous scenarios. Thus, the organisation is required to inform management and employees about the retention period of safety procedures and clearly provide an indication of the amendments that have been made to the safety procedures following the completion of the three-year retention period not one year.

**Figure 4.8: Item 7 Continuous Improvement**

Continuous improvement of SHE management and performance is one of the company’s SHE policy commitment principles.

The majority of the participants (61.8%) agree that continuous improvements to the safety, health, and environment management and performance are included as one of the company’s policy commitment principles. Clearly, regular attention is devoted towards the safety, health, and environmental aspects within the organisation and constant effort is dedicated towards improving and developing safety, health, and environmental aspects within the organisation. This is particularly important, as adjustments, amendments, and additions to procedures and policies are often required as facets within an organisation change. Thus, the company appears to be conducting regular reviews and revisions in order to improve the safety, health, and environmental domains of the company.

**Management’s Level of Vigilance**

The participants’ responses to the single item aimed at assessing the management’s level of vigilance regarding occupational health and safety are detailed below.
Figure 4.9: Item 8 Management’s Level of Vigilance
Management identify, evaluate, and control hazards in the plant.

Figure 4.9 indicates that the majority of the participants’ agree (61.8%) that management identify, evaluate, and control risks and hazards within the manufacturing plant. Hence, management appears to be efficient and effective in monitoring and controlling various health and safety hazards that may be or are being experienced at the company. However, some participants indicated that they were undecided (18.2%) or disagreed (9.1%) that the management identify, evaluate, and control health and safety risks. Perhaps, the perspectives represent employees that have experienced negative health and safety incidences within the company, possibly denoting the need for management to further develop methods for improving, monitoring, and controlling hazards.

Management Attitudes Towards Health and Safety Measures
The respondents’ perceptions regarding management’s attitude towards health and safety measures are delineated into the visual presentations that follow. Collectively, the findings provide a global employee perspective of the attitudes of management towards health and safety measures.

Figure 4.10: Item 9 PPE Minimises Injuries
Examining the findings in Figure 4.10, the majority of the participants agreed (61.8%) and a substantial percentage strongly agreed (34.5%) that personal proactive equipment (PPE) minimises injuries. Perhaps, this indicates that the PPE assists employees in avoiding health and safety issues or ensures that the injuries incurred are less significant and threatening. However, the implementation and use of PPE’s appears to be crucial to reducing injuries and, perhaps, the severity of injuries, which is important for maintaining the health of integral employees and assisting the organisation to avoid employee injury cases.

**Figure 4.11: Item 10 Taking Short Cuts**

Taking short cuts are regarded as dangerous, risky actions.

As outlined in Figure 4.11, almost all of the participants either agreed or strongly agreed that taking short cuts is considered a dangerous and risky endeavour. Indeed, the employees and managerial personnel appear to be acutely aware of the repercussions associated with taking short cuts. Perhaps, this denotes that shortcutting is infrequent, which reduces or minimises the likelihood of employees incurring injuries. It may be that the OHS Act has improved employees’ and managers’ understanding of the potential harm and dangers associated with their jobs, promoting their awareness of the risks involved in taking short cuts.

Figure 4.12 denotes that most of the participants strongly agreed (36.4%) or agreed (47.3%) that conducting continuous mini-risk assessments assist in reducing accidents within the manufacturing plant. Perhaps, this has promoted the participants’ awareness and understanding of the risks associated with taking short cuts (see Figure 4.11), resulting in a reduction of accidents and employee injuries. The mini-risk assessment appears to be an integral component to maintaining the health and safety of the employees and mitigating undesirable incidents and injuries and should continue to be encouraged to facilitate the safety of employees within the company.
Figure 4.12: Item 11 Mini Risk Assessment

The continuous mini-risk assessment helps to reduce accidents in the plant.

Taking Ownership of Occupational Health and Safety Measures

The items that assess the participants’ perceptions regarding whether ownership of occupational health and safety measures is taken are displayed and discussed below.

Figure 4.13: Item 12 Daily 10 minutes SHE Box Talks

The daily 10-minute SHE box talks are important.
According to Figure 4.13, the participants tended to agree (47.3%) and strongly agree (40.0%) that the daily 10-minute safety, health, and environment box talks are important. Perhaps, this indicates that the daily time that is spent discussing safety, health, and the occupational environment is informative and assists employees to reduce the likelihood of injuries. Considering the participants’ overwhelming agreement in terms of the importance of the daily safety, health, and environmental box talks, the organisation is encouraged to continue with such discussions to sustain and even improve the health and safety within the company.

**Figure 4.14: Item 13 Weekly SHE Box Talks**

The weekly SHE box talks are important.

In addition to the daily 10-minute safety, health, and environment box talks, the participants’ also tended to agree that the weekly, lengthier safety, health, and environment box talks are also important. Although conclusive delineation of the areas of importance these box talks contribute to specifically, the tremendous agreement regarding the criticalness of the safety, health, and environment box talks denotes that, in some way, these are contributing to the organisation and should continue for the benefit of employee’ health and safety.

**Management Safety Compliance**

The following details the participants’ perceptions of the safety compliance levels of management and whether management is active in the safety assurance and improvement process.

**Figure 4.15: Item 14 Continuous Improvement**

Management commits them to continuous improvement of the SHE system.
Based on Figure 4.15, the largest proportion of the participants (38.2%) indicated agreement that management commits themselves to continuous improvement of the safety, health, and environment system. A substantial percentage of the participants also denoted strong agreement (29.1%) with the item. These findings suggest that most of the participants believe that management are constantly active and engaged in improving the safety, health, and environment system. However, 29.1% of the participants indicated they were undecided about whether they perceived management as being committed to the continuous improvement of the system. Perhaps, this suggests that many of the employees are unaware that managerial personnel are involved in improving the system. In order to ensure that the employees are aware that management is active and committed to being involved and working towards the improvement of the system, management is encouraged to inform the employees of the progress and effort that is being devoted towards the health and safety within the organisation and outline the path for safety and health improvement to the employees.

**Figure 4.16: Item 15 Safety Awareness**

Safety awareness can minimise accidents in the plant.

Considering Figure 4.16, the participants all agreed (61.8%) or strongly agreed (38.2%) that safety awareness...
can minimise accidents in the plant. Clearly, this denotes how integral being aware of safety measures and procedures is for avoiding injuries to employees. This finding may also reflect the effectiveness of the daily and weekly box talks in informing employees about health and safety and providing employees with the knowledge of safety procedures and protocol as well as non-safety repercussions.

**Leadership in the Plant Towards Safety**

Health and safety is one of the most important areas that require leaders to enforce policies and safety guidelines and act quickly once an incident has occurred. The following items examine the organisation’s manufacturing plant leadership towards safety.

**Figure 4.17: Item 16 Resolving Safety Concerns**

Management resolves safety concerns raised by workers.

![Figure 4.17](image_url)

Figure 4.17 suggests that the majority of the participants’ (52.7%) agree that management resolves the safety concerns indicated by employees. However, approximately one quarter of the respondents (23.6%) indicated disagreement. The discrepancies between the response patterns may denote that management resolves certain concerns and not others. Additionally, considering the sample composition, the managerial participants may have indicated agreement whereas the employees’ included in the sample may have indicated disagreement. If so, this may suggest that the management may not be amenable to resolving the safety concerns of employees. Although inconclusive, it is important that management (1) resolves the critical safety issues of employees or (2) provides an explanation for decisions not to resolve health and safety issues raised by employees at the organisation. This may appease the issues certain participants’ reflected in having unresolved safety issues.

**Figure 4.18: Item 17 Taking Ownership of Safety**

Management takes ownership of health and safety in the plant.
The majority of the participants indicated that the health and safety protocol and procedural implementation and monitoring is the responsibility of the organisation (see Figure 4.3). Though a large percentage of the participants (45.5%) agreed that management takes ownership of the health and safety in the plant, many were undecided (23.6%) and some disagreed (10.9%). Evidently, the discernment is that the group of individuals responsible for health and safety appear not to be thoroughly perceived as taking full ownership of health and safety in the company.

**Communication**

The item that examines the participants’ perceptions of the communication of safety within the company is delineated below.

**Figure 4.19: Item 18 Communicating Safety Issues**

All safety related changes are communicated to all members of the department.

The majority of the participants (63.6%) agreed that safety related changes are communicated to all employees...
within their respective departments. This may suggest that a high proportion of the employees are appropriately informed about health and safety alterations that have been instituted. However, some participants were undecided (7.3%) and disagreed (7.3%), indicating that safety changes may not be communicated to certain employees when implemented. It is critical that each employee obtain specific detail regarding any of these changes, as any changes that are not detailed may result in accidents or a following of the incorrect protocol post-incidents.

**Organizational Safety Culture**

The respondents’ perceptions pertaining to the items that reflect the general organisational safety culture are displayed and discussed below.

**Figure 4.20: Item 19 Safety Slogan**

Safety is the number one priority in the plant.

According to Figure 4.20, the highest percentage of the respondents’ (41.8%) agreed that safety is the number one priority in the plant. A substantial percentage (29.1%) also strongly agreed, denoting that most of the participants perceive safety as the priority item within the manufacturing plant. A number of participants were undecided (18.2%) and others disagreed (9.1%), raising some concern about whether safety is widely recognised as the primary target of the company.
Figure 4.21: Item 20 Incidents Investigation

Management immediately investigate incidents that take place in the plant.

Based on Figure 4.21, the highest proportion of participants’ (41.8%) indicated disagreement that management immediately investigate incidents that occur in the plant. A further 10.9% strongly disagreed. Considered collectively, this is a significant concern for the employees and the organisation. From the perspective of employees and managers, the reasons and causes of incidents may not be resolved timeously, which may result in further injury to other employees (e.g., if an accident occurred due to machinery malfunctioning and is not fixed or replaced). A large percentage (32.7%) suggested that management does immediately investigate incidents that occur in the plant. Perhaps, this is even more of a concern, as certain employees, accidents, or departments may be obtaining preferential treatment in terms of the initiation time of investigations that occur following incidents.

CONCLUSIONS AND RECOMMENDATIONS

This section contains the discussion of the findings that have been reported in Chapter four. The responses of the interviewees are discussed in terms of the objectives of the study. The results are reflected from a broad-spectrum point of view of responses from the participants at the steel manufacturing firm. The presentation is in stages, and each of the objectives will be discussed. The chapter includes a discussion of the findings in relation to various literary reports, dealing with aspects raised in the discussion. This involves a general analytical reflection of the discussed material from a theoretical perspective.

Findings from the Study

Findings from the Literature Review
According to Zwetsloot (2003), the OHSAS 18001 safety and health standard has proved to be an effective standard that continues to gain popularity in well established businesses all over the world. It helps bring about dramatic changes in many companies whose practices are now geared towards zero tolerance of health and safety hazards in conducting their business.

Author O’Connel (2004) supports the theory suggested by Zwetsloot (2003), stating that the benefits that are derived from complying with the OHSAS 18001 regulation have proved to be very attractive to progressive organisations all over the World. The standard helps to form an all embracing protective measure for the safety of the workers and makes provision for the evaluation of the success of its implementation (O’ Connel, 2004).

Literature suggests that both employers and employees have a full understanding on the part of all as the terminal objective of its OSH measures. Understanding is defined as one’s ability to think and to act flexibly in terms of what one knows. Understanding is essential before one can respond correctly to a concept and show the correct response that is expected. When one cannot interact competently with a safety concept in the workplace, one poses a safety risk. Understanding precedes one’s capacity to comply with any given rule. People derive value from something they are familiar with. This has serious implications for conforming and complying with the given rules. Negligence and ignorance are inclined towards non-conformance and non-compliance with any given rule. Workers have to adhere to the rules to ensure safety in the workplace. To do so effectively require knowing what the rules are all about.

A proactive involvement is one of the major requirements for engaging vigilantly with safety and health in the workplace as stated by Schoeman and Schroder (1994: 8).

Unhealthy conditions pose workplace risks and leaves victims vulnerable to safety hazards. Vigilance speaks against being lax in the workplace. Accordingly employees are not only responsible for their personal safety at the workplace but for that of other workers as well. Non-conformity to this rule has serious legal implications, as it puts other people’s lives at stake as well as the reputation of the company. Safety compliance requires a willingness to participate despite the attitude one may hold towards the rule. Such people comply from calculated motivation outcomes whereas the majority of the workers, who are strong decision makers, would comply based on normative motivation when the weak decision makers would simply be motivated by social factors. This confirms that safety attitudes can be instilled in the workers.

**Primary Findings from the Study**

Findings from this study have revealed, as indicated in figure 4.2 - 4.7, that management and their employees fully understand the occupational health and safety management system. Furthermore the study revealed that the company did make workers aware of the possible workplace hazards. Most of the respondents in figure 4.9 reveals 61.8% agree that management identifies, evaluates and controls risks and hazards within the workplace. The study further proved that workers understand that personal protective equipment can minimise injuries in the plant. Although majority of the respondents agreed that management commits themselves in continuous safety improvement. Some respondents disagreed with the statement that management immediately investigates health and safety incidents in the plant. Annexure F proves that management takes too long to investigate
injuries that occurred for the corrective measures to be put in place. This simply means that workers might be exposed to risk.

**Conclusion**

The literature has revealed that it is important for the management to commit and to take ownership of health and safety in the workplace. Management must learn to get employees on the floor involved when making any health and safety changes and decision within the plant. The study has revealed that management takes too long to react and investigate health and safety incidents that occurred in the plant. It is important that they form a team spirit environment in order to make health and safety a success in their plant.

**Recommendations**

The primary findings have indicated that management can improve and resolve safety related issues within the firm. The following recommendations are made based on the findings:

- Management’s main focus area should be on improving their reaction time to accidents and injuries which occur in the firm, to avoid repetition of injuries.
- Address issues that are raised by the shop floor employees and also encourage them to report all the unsafe acts and unsafe conditions.
- Communication of any safety related changes that are taking place.
- Improve the leadership style in the sense that they must lead by example, they must take part in safety performance, and they must enforce discipline should any person be found to be violating the safety system.
- Assign a responsible person to monitor and communicate any safety related matters that are logged in the safety incident book (SIB) and to make sure that outstanding issues are addressed on time. This may encourage employees to report more safety matters that need urgent attention.
- Provision of safety related training will help to make the employee to increase their knowledge about health and safety at work.

**Areas for Future Research**

Further research can be done on evaluating effectiveness of safety related training within the company. The methodology of data collection that is recommended for the purpose of future study can be interview and open ended questions that will give the respondents the freedom to further explain their views.

**Conclusion**

This study has confirmed that there is a strong relationship between worker perceptions and safety in the workplace. The literature has established several factors that have a bearing on the link between human behaviour and workplace safety. In reality people are different. Their values differ, what others hold with high esteem might be considered insignificant by others.
Some people derive pleasure from engaging in risky behaviours while others guard vigilantly against risks. Human nature is chaotic. If it is not harnessed effectively by the rule of law the wheel of civilization would stop running. Organisational establishments are faced with a huge challenge of enforcing safety compliance in the workplace. As in a netball match, to maintain order one has to play by the rules. To ensure that order is maintained, a referee is put in place. The same applies to the workplace.

NOTE: This study was conducted by the principal author in 2013 in partial fulfilment for the award of the Masters Degree in Business Administration (MBA) at the Regent Business School, Durban, South Africa. The dissertation was supervised by Vartikka Indermun who is an external supervisor, examiner and academic at the Management College of Southern Africa (Mancosa). The manuscript was read and turned into a journal article for publication by Professor Anis Mahomed Karodia who is Professor, Senior Academic and Researcher at the Regent Business School, Durban, South Africa.
Please note that the entire bibliography is cited in this article which includes the references pertinent to this article.
In the event that you require a copy of the full study, kindly furnish reasons for requiring the study and forward request to the following Email address: akarodia@regent.ac.za

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