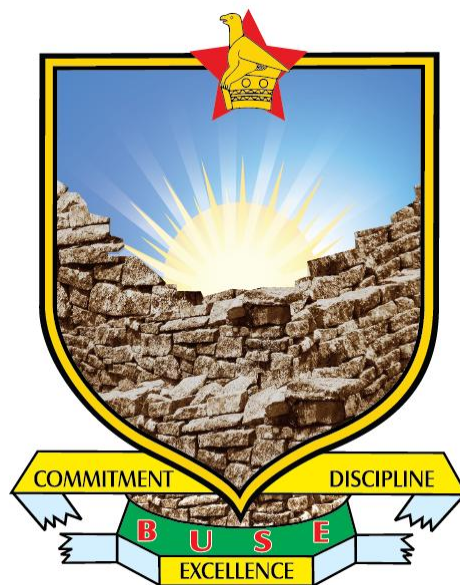


BINDURA UNIVERSITY OF SCIENCE EDUCATION

DEPARTMENT OF ENVIRONMENTAL SCIENCE

**AN ASSESSMENT OF THE EFFECTIVENESS OF ORGANISATIONAL OHS
MANAGEMENT SYSTEMS IN THE BEVERAGE INDUSTRIES OF ZIMBABWE.**

A CASE STUDY OF PRObottlers PRIVATE LIMITED, ZIMBABWE.



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(B203223B)

**DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS OF A BACHELOR OF SCIENCE HONOURS DEGREE (BSc
SHEM) IN SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT**

[JUNE 2024]

DEDICATION

This research is dedicated to the people who have supported me throughout my education.
Thank you for making me see this adventure through to the end.

DECLARATION

To be compiled by the student

Registration Number **B203223B**

I **Tsitsi Ruvimbo Bulaki do** hereby declare that this work-related project is my original work and has not been submitted before. All the information derived from other sources is indicated in the project.

Signature of the student..... Date

To be compiled by the Supervisor

This dissertation is suitable for submission to the faculty and has been checked for conformity with the faculty guidelines.

Signature of the Supervisor..... Date

ACKNOWLEDGEMENTS

Firstly, I would like to thank God for his favour and strength. I would not have made it thus far. My sincere gratitude goes to my supervisor Mr Dzvene, for supporting me in my efforts to explore this research.

I sincerely thank my family and friends for their support and assistance.

I am particularly grateful to Rufaro Mbirimi, Primrose, Rachel, and Kumbirai for their continued mental and emotional support during this journey.

ABSTRACT

Occupational health and safety management systems (OHSMS) are internationally recognized as versatile frameworks that can be applied across businesses of all sizes and types to manage accidents, injuries, health risks, and workplace hazards. This study sought to evaluate the effectiveness of the organizational OHSMS employed within the beverage industry in Zimbabwe, using PRObottlers Private Limited as a case study. The research utilized a convergent triangulation approach, combining both qualitative and quantitative techniques. Specifically, the methods included in-depth interviews and secondary data searches, as well as self-administered questionnaires distributed to forty PRObottlers employees across different departments, using convenience sampling. The effectiveness of the OHSMS was further analysed through purposive interviews with key experts in the field. Thematic analysis was employed to examine the qualitative data, while the quantitative data was analysed using the Statistical Package for Social Sciences (SPSS) software v25. The key objectives of the study were to assess the level of employee knowledge regarding the OHSMS, identify the challenges and barriers hindering its effective implementation, and evaluate the system's success in preventing workplace accidents and injuries. The results indicated that the OHSMS implemented at PRObottlers did not lead to a significant reduction in workplace accidents and injuries. Furthermore, the overall effectiveness of the system was undermined by several factors, including insufficient management commitment to OHS practices, understaffing, lack of financial resources, and inadequate training. The study concludes by recommending a more comprehensive and proactive approach to OHS management, as well as the importance of OHSMS certification, to address the identified gaps and enhance the effectiveness of the system in creating a safer and healthier work environment within the beverage industry.

Keywords: *Knowledge, challenges and barriers, Occupational Health and safety, Occupational Health and Safety Management System, accidents*

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LIST OF ACRONYMS AND ABBREVIATIONS

ISO- International Standard Association

NSSA- National Social Security Authority

OHS- Occupational Health and Safety

OHSMS- Occupational Health and Safety Management System

CHAPTER 1: INTRODUCTION

This study aims to assess the effectiveness of the occupational health and safety (OHS) management systems employed by organizations in the beverage industry. The chapter offers an overview of the study, which includes background details on the research problem as well as a statement of the specific problem being examined. It also outlines the study's research objectives, explains the significance of the research, presents the research hypothesis, and describes the focus area or scope of the investigation.

1.1 Background of the study

The Manufacturing industry continues to be socially and economically vital, even amid recent economic declines globally. It is a major contributor to incomes, employment, and GDP, and is the leading manufacturing sector in most EU countries (Food Drink Europe, 2018). However, increased mechanization in the industry has led to higher work volumes, resulting in greater worker stress from more monotonous, repetitive tasks (Musungwa & Kowe, 2022). This has correlated with a rise in musculoskeletal disorders like back and upper limb injuries, as researchers Leitao and Greiner (2016), have observed.

Manyele *et al.* (2008) identified workplace hazards as the most severe and threatening events to employees and companies. These hazards can stem from working tools, environments, or human behavior. Yusuf *et al.* (2012) stated that working tools, environments, and human conduct are critical to enabling production activities. Performing the required work necessitates the displacement of both people and equipment, which can introduce variations in temperature, pressure, or sound levels in the work setting. Workers in Zimbabwe have legal entitlements to occupational safety and health privileges, as outlined in the country's National Labour Act, NSSA Act, and Factories & Works Act and its regulations (Musungwa & Kowe, 2022).

The International Labour Organisation (ILO) (2022) statistics indicated that an estimated 2.3 million individuals fall victim to job-related incidents and health issues annually, amounting to around 6 000 deaths per day. Approximately about 340 million occupational accidents and 160 million cases of work-related illnesses are recorded annually. The economic toll of these work-related accidents and fatalities is significant, estimated at 4% loss in Gross Domestic Product (GDP). The NSSA Annual Statistical Report (2021) indicate that the total number of claims received was 4 241 of which males contributed 82% and females 18%. Occasionally, the

manufacturing industry has seen a rise in work-related injuries, illnesses, and fatalities as proposed by Mrema *et al.* (2015). According to data from the NSSA Statistical Report (2021), the food production industry had an increase in work-related injuries from 4% in 2020 to 6.3% in 2021.

An organisational management system refers to how an organisation controls or manages the interconnected business parts to attain set goals, (ISO, 2018b). The International Organisation of Standardization (ISO), further explained that the nature of objectives can relate to various matters such as efficacy in operations, occupational health and safety, and quality of services or produce. Autentrieth *et al.* (2016) stated that OHS management systems gained recognition for their flexibility and effectiveness in minimising injuries, accidents and fatalities, hazards, and OHS risks across industries and businesses of different sizes.

In this regard, Yoon *et al.* (2013) study showed that various countries have set and established standards aimed at reducing workplace accidents, injuries, and occupational illnesses. Mrema *et al.*, (2015), reported that many companies have established OHSMSs, commonly described as occupational health and safety guidelines (OHSGs), programs (OHSPs), or administrations (OHSAs). These systems incorporate legislative, regulatory, and standardized provisions; educational, evaluative, and informative programs; and inspection and management control mechanisms (Mrema *et al.*, 2015; Sklad, 2019).

Most research about OHSMSs has been limited to specific subject areas, including the implementation of OHS, the implications on organisational performance, and the effects on occupational accident or injury rates. For instance, Fernandenz-Muniz *et al.*, (2012) researched the relationship between workforce management and performance in Spanish firms and concluded that safety management systems and programs had a mutually reinforcing, positive effect improving both safety outcomes and the performance of workers. Santos *et al.*, (2012) also investigated the benefits of health and safety management system certification in small and medium-sized companies in Portugal. He concluded that organisations improved working conditions, compliance with legislation as well as communication about risks and hazards although some faced difficulties in changing the company's culture as well as motivating personnel, and high certification costs. Another study conducted by Oduor, (2013) in Kenya investigated the OHS practices implications on employee performance in beverage companies and indicated that occupational health and safety officers should enforce fines and penalties on

employees violating OHS laws as well as offer training at the workplace. Research by Musungwa and Kowe, (2022) on the effects of the implementation of OHSMSs in preventing accidents at a beverage firm in Harare (Delta Sparkling Beverages) indicated that lack of knowledge by workers on safety systems, understaffing, and lack of top management participation resulted in accidents although systems were in place.

Substantial improvements have been accomplished in workplace OHS. However, job-related injuries, risks, and accident rates are challenging to control and manage (Sousa *et al.*, 2014). A study conducted by Sklad (2019), concluded that the prevention of occupational accidents and successful implementation of OHSMS success is not achieved by introduction alone but must be complemented by ongoing system assessments and improvement.

PRObottlers (Pvt) Ltd activities are also accredited to different systems such as the ISO9001:2015, which emphasizes Quality Management Systems; ISO2200:2018, which emphasizes Food Safety Management Systems Development and Implementation; and ISO45001:2018, which emphasizes Occupational Health and Safety Management Systems. The company is committed to the maintenance of an integrated SHEQ Management System that ensures the company's operation complies with legal Safety, Health, Environmental, and Quality requirements, as well as the creation of standards and regulations and communication to employees, contractors, and visitors on the SHEQ Policy to raise awareness of everyone's responsibilities. However, despite employing the organisational management system accidents and injuries are increasing which necessitates evaluating the organisation's OHS management system.

1.2 Problem Statement

OHSMSs are essential for providing a safe and conducive working environment for all workers and visitors. The organisational OHS management systems contribute to ensuring employee safety and preventing workplace accidents/injuries. At PRObottlers, a concerning trend of injuries has been observed and monitored over eight months, and the frequency rate of injuries has been increasing. There are incidents of varying nature such as back and hand injuries to be specific (recorded and unrecorded injuries). These musculoskeletal diseases (MSDs) have been alarmingly high, with an average of at least six injury cases recorded per month, resulting in significant worker pain, lost productivity, and rising medical costs. Indirect and direct costs are incurred as a result of injuries/accidents, an estimate of \$11000 is paid annually to NSSA for

all permanent workers (Accident prevention and compensation fund), and indirect costs such as medical bills to treat casualties both contract or permanent workers. The Probottlers staff clinic managed to attend 103 clinic visits from employees during the year (Innskor Africa Annual Report, 2023).

Despite having organisational OHS management systems in place, these alarming trends suggest gaps in their effectiveness. In addition, regulatory inspections are infrequent hence there may be missed opportunities to identify and rectify potential hazards or non-compliance issues within the organization, which could contribute to the persistence of the problem. However, the study seeks to identify and analyse the gaps that result in the occurrence of incidents, contributing to improved employee safety and reduced workplace incidents within PRObottlers and potentially informing broader industry improvements.

1.3 General Objectives

The thrust of the researcher was to assess the effectiveness of organisational OHS management systems in the beverage industries of Zimbabwe focusing on PRObottlers Private Limited.

1.3.1 Specific Objectives

1. To determine the state of employee knowledge of OHS management systems in the beverage industries of Zimbabwe.
2. To identify the challenges and barriers to effective OHS management systems in the beverage industries of Zimbabwe.
3. To evaluate the effectiveness of these systems in preventing accidents and injuries.

1.4 Hypothesis

H₀: The PRObottlers' OHS management system is ineffective in reducing and preventing work-related injuries and accidents.

H₁: The PRObottlers' OHS management system is effective in reducing and preventing work-related injuries and accidents.

1.5 Justification

Occupational injuries and illnesses caused by work conditions and practices result in significant hardship for individuals and their families. This creates an unnecessary burden on the workforce and government through compensation and pension costs. While the financial impact on organizations is less severe than the human costs, accidents and absenteeism from health issues still cause losses and damage. Since many workplace tasks are done manually, there is often low attention paid to OHS. Ensuring the well-being of employees is crucial for maintaining a productive and sustainable workforce. Close and continuous focus on workplace health and safety is therefore very important.

This study will help the beverage industries of Zimbabwe, PRObottlers Pvt (Ltd) in particular to identify areas that require improvement in managing the organisational OHS management systems. The company can improve its practices, enhance employee safety, and reduce workplace accidents/injuries. Moreover, the findings can potentially be generalized to other beverage companies thus proving a broader understanding of the state of OHS management systems in the industry. Researching the effectiveness of Organisational OHS management systems can help fill a knowledge gap. It can provide evidence, data, and insights specific to the local context, which can guide policymakers, industry stakeholders, and researchers in making informed decisions and developing targeted interventions. Moreover, this study may help assess the level of compliance and identify any non-compliance issues, this information can be valuable for regulatory authorities in Zimbabwe to refine and enforce relevant regulations. The results of this research can also contribute to the development of better policies, practices, and standards in the beverage industry, ultimately benefiting both workers and consumers in Zimbabwe.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The literature review thoroughly examines what has been previously researched and written on a specific topic. Reviews are typically found in secondary sources such as textbooks, academic journals, archives, and newspaper articles (Krueger, 1988). The current chapter is an elaboration of what other academics have found about the objectives of the study and presents the theoretical framework used. The literature review can help the researcher to identify knowledge gaps of other prior researchers and how a new study can potentially fill in the gaps. The researcher will rely on renowned experts, writers, contributors, and presenters who shed light on OHS management systems in the beverage industries of Zimbabwe.

2.1.1 Conceptualizing concept of “Occupational Health and Safety”

Alli (2008), defines occupation as typical work or business that an individual pursues, particularly as a means of earning for a living. He also conceptualizes occupation as a set of jobs whose main tasks and duties exhibit a high degree of similarity. The WHO defines health as a comprehensive state of physical, mental, and social well-being not just the absence of sickness or infirmity. According to Omolawal (2021), safety is a condition of protection from danger or situations that can cause harm. Safety is also defined as security from accidental injury or death achieved through the implementation of targeted safeguards and preventative measures (Omolawal, 2021). Occupational health and safety incorporate the promotion and maintenance of the highest levels of physical, mental, and social well-being for workers in all occupations (Alli, 2008). It also involves the development and enforcement of regulations, standards, initiatives, and strategies designed to create a conducive and safe workplace for employees and their co-workers, families, customers, and other stakeholders (Omolawal, 2021).

2.1.2 Occupational Health and Safety Management Systems

International Standard Association (2018a) defined a management system as how an organisation controls or manages interconnected parts of its business to attain the set objectives. Campanelli et al (2021), asserted that the formulation of policies by organisations that did not

implement management systems was a way of demonstrating and commitment to safety health, and environmental aspects. According to Bayram (2018), many organisations are employing and adopting OHSMSs to ensure the creation of a safe and healthy workplace by reducing and eliminating risks with a proactive approach. Klimecka-Tatar and Niciejewska, (2016) suggested that the OHSMS consists of but is not limited to the following elements: the operational framework, planning, accountabilities, policies, processes, and resources for development, and review of OHS policy.

According to Autenrieth *et al.* (2016), occupational health and safety management systems are extremely adaptable and are regarded as an effective means to decrease workplace hazards, accidents, and occupational health and safety risks thereby establishing operating conditions that protect workers.

Literature indicates that OHSMS initiatives can be either obligatory or voluntary. Obligatory OHS management systems are mandated by national laws and regulations and their implementation is imposed through inspections and fines. In contrast, voluntary OHS management systems are initiated by private enterprises, employer groups, government entities, insurance firms, professional organizations, and standards boards and are not directly linked to legislative requirements. The adoption of voluntary OHSMSs is not a requirement by governments but may be encouraged through incentives offered by governments or insurance providers. Voluntary management systems are particularly promoted by commercial businesses and are most commonly adopted by big organisations.

2.2 Regulatory Framework for OHS in Zimbabwe

Ensuring the health and safety of employees is a critical aspect of any industry, including the beverage sector. Effective OHS management systems are essential to protect employees and promote a safe working environment. However, success depends largely on knowledge and awareness of the workforce regarding the OHS policies, procedures, and responsibilities (Vredenburg, 2002). In the context of the Zimbabwean beverage industry, the legal framework for OHS is primarily governed by the National Labour Act, the NSSA Act, and the Factories & Works Act (Musungwa & Kowe, 2022). These regulations mandate businesses to provide a safe and healthy occupational environment and require workers to be informed about OHS practices. Other legislation governing the beverage industry include the Pneumoconiosis Act (Chapter 15:08), the EMA (Chapter 20:27), the Food and Food Standards Act (Chapter 15:04),

the Public Health Act (Chapter 15:09) as well as the Zimbabwe National Water Authority Act (Chapter 20:25) (Musungwa & Kowe, 2022).

2.2.1 Food and Food Standards Act (Chapter 15:04)

The Food and Food Standards Act regulates the production, distribution, and sale of food products in Zimbabwe. It establishes standards for the safety and hygiene of food. The Act covers various aspects such as food inspection, licensing of food premises, and the enforcement of food safety regulations. (Shabani *et al.*, 2024)

2.2.2 The Public Health Act (Chapter 15:09)

The Public Health Act focuses on public health and hygiene matters, including the prevention and control of diseases. It empowers health authorities to enforce measures related to food safety, water quality, waste disposal, and general sanitation. The Act provides provisions for inspections, permits, and regulations concerning the manufacturing and sale of food and beverages (Musungwa & Kowe, 2022).

2.2.3 Zimbabwe National Water Authority Act (Chapter 20:25)

The Zimbabwe National Water Authority Act establishes the Zimbabwe National Water Authority (ZINWA) as the regulatory body responsible for managing and controlling water resources. It includes provisions related to the quality and supply of water, which is important for beverage manufacturing processes that involve water usage.

2.2.4 Environmental Management Act (Chapter 20:27)

The Environmental Management Act addresses environmental protection and sustainable development in Zimbabwe. It sets out provisions to manage and control activities that may impact the environment, including waste management and pollution control. Compliance with environmental regulations is crucial for beverage manufacturing industries to ensure sustainable practices (Musungwa & Kowe, 2022).

2.3 Employee Knowledge and Awareness of the OHS Management System

Studies from other industries indicated that employee knowledge and awareness of OHS management systems can be influenced by factors such as Organisational culture, leadership commitment, and the effectiveness of training programs (Tapa & Celik 2017). Research done by Boughaba *et al.* (2014) in the Algerian chemical industry indicated, strong management support and worker participation were the key drivers of OHS knowledge and compliance.

Employees can acquire occupational safety and health knowledge through:

- i. Formal training and education- training can take the form of in-person workshops, or on-the-job instruction.
- ii. Ongoing safety Communication and Awareness- Regular safety meetings, toolbox talks, and safety-focused communications such as posters and newsletters (Fernández-Muñoz *et al.*, 2012).
- iii. Participation in safety committees and initiatives- risk assessments, and continuous improvements (Boughaba *et al.*, 2014).
- iv. Access to OSH resources and information- OSH manuals, and safety data sheets

2.4 Challenges and barriers to effective OHS management systems

One of the key barriers identified in the literature is the lack of awareness and knowledge among workers regarding OHS policies and procedures. A study on the food and beverage sector in Zimbabwe found that while employees recognized the importance of OHS, their understanding of specific OHS practices was limited. This lack of employee engagement can undermine the effectiveness of OHS management systems (Vinodkumar & Bhasi, 2010).

Additionally, resource constraints such as insufficient funding, inadequate safety equipment, and limited access to OHS training can hinder the maintenance and implementation of organizational management systems (Amponsah-Tawiah & Dartey-Baah, 2011). However, in Zimbabwe, economic challenges and limited public investment in Occupational safety and health infrastructure may worsen the resource-related barriers.

Organizational and managerial factors can also impede the effectiveness of OHS management systems. Research has shown that a lack of management commitment, poor safety leadership, and ineffective communication channels can undermine the integration of OHS practices (Tapa & Celik, 2017; Fernández-Muñiz *et al.*, 2012). Where production demands and operational efficiency are often prioritized in the beverage industry, the integration of OHS considerations may face resistance. Furthermore, industrial-specific factors such as the use of hazardous materials and the nature of production processes may introduce challenges and obstacles to the maintenance and execution of effective OHS management systems (Cagno *et al.*, 2020). Musungwa and Kowe (2022), asserted that resistance, ignorance, and understaffing (shortage of Key Safety Health personnel to manage organizational OHS) are the barriers to effective management.

2.5 Effectiveness of OHS Management Systems in Preventing Accidents and Injuries

Effective OHS management systems play a crucial role in identifying, assessing, and mitigating potential safety and health risks, ultimately aiming to prevent work-related accidents and injuries (Fernández-Muñiz *et al.*, 2012). However, existing literature on the efficiency of OHS management systems in the Zimbabwean beverage industry is limited.

Research conducted by Amponsah-Tawiah and Dartey-Baah (2011) in the Ghanaian manufacturing sector found that the implementation of OHS management systems resulted in a decrease in the risk of work-related accidents. The researchers highlighted the importance of a comprehensive approach that integrates technological, behavioural, and organizational factors to enhance OHS performance.

Likewise, Cagno *et al.* (2020) researched the Italian manufacturing industry and revealed that the implementation of OHS management systems had a significant impact on operational key performance indicators, such as reduced downtime, improved product quality, and increased productivity. These findings suggest that effective OHS management can contribute to broader organizational benefits beyond just accident prevention.

In addition, Zubar *et al.* (2016) also conducted a study in the Indian manufacturing industries. The research discovered that incentives, good management, and personnel training increased assurance and responsibility among staff and reduced occupational hazards in most industries and enterprises. Another study was conducted by Musungwa and Kowe (2022) at a Harare

beverage company in Zimbabwe. It highlighted the challenges faced in the operationalization and implementation of safety systems. The results indicated that non-adherence to safe operating procedures was the major cause of accidents and that there was no association between the occurrences of accidents to OHSMS at the company.

However, the effectiveness of OHS management systems can be prejudiced by various contextual issues, such as organizational culture, worker engagement, and resource availability (Vinodkumar & Bhasi, 2010). In the Zimbabwean beverage industry, these factors may present unique challenges that could hinder the full realization of the benefits associated with effective OHS management systems

2.6 Theoretical framework

The Sociotechnical framework was applied in the research. This framework acknowledges the complex interplay between social factors (organisational culture, human behaviour) and technical aspects (machinery, work processes) in shaping the OHS outcomes. It leverages qualitative data collection methods such as document reviews and employee interviews to analyse the existing organisational OHS systems. The framework assumes that the dynamic interactions between people and technology require holistic analysis. Moreover, implications of the framework include that analysis of challenges and barriers through the STS Lens can be achieved considering the cultural norms, leadership practices, and resource constraints that impact OHS management systems.

2.7 Conceptual framework

This conceptual framework is shown in Figure 2.7.1. Outcomes may include decreased workplace accidents and injuries, increased employee health and well-being, enhanced organisational reputation, and compliance with legal and regulatory requirements.

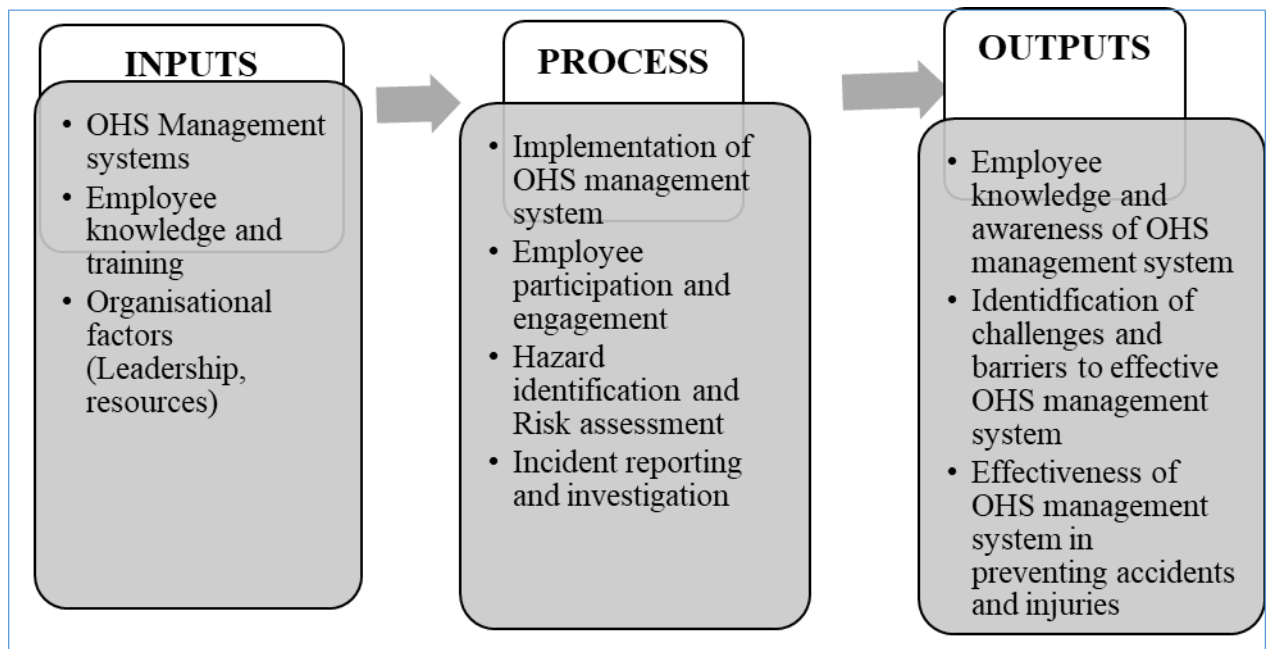


Figure 2.7 1 Conceptual Framework

Source: Researcher 2024

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This section examines the research methods used in the research study. This section provides an outline of the research methodology employed in carrying out this research. According to Neuman (2020), research methodology refers to the steps adopted by the researcher when studying a research problem. The researcher outlines the key components of the research methodology employed in this research; the study design, target population, sample and sampling procedure, and research instruments that were used in the study of the assessment of organisational management systems in the beverage industries of Zimbabwe (A case study of PRObottlers Pvt (Ltd)).

3.1 Study Area

PRObottlers Private Limited Company Head Office is located in Ruwa under Goromonzi District. Figure 3.1 below shows the location of PRObottlers.

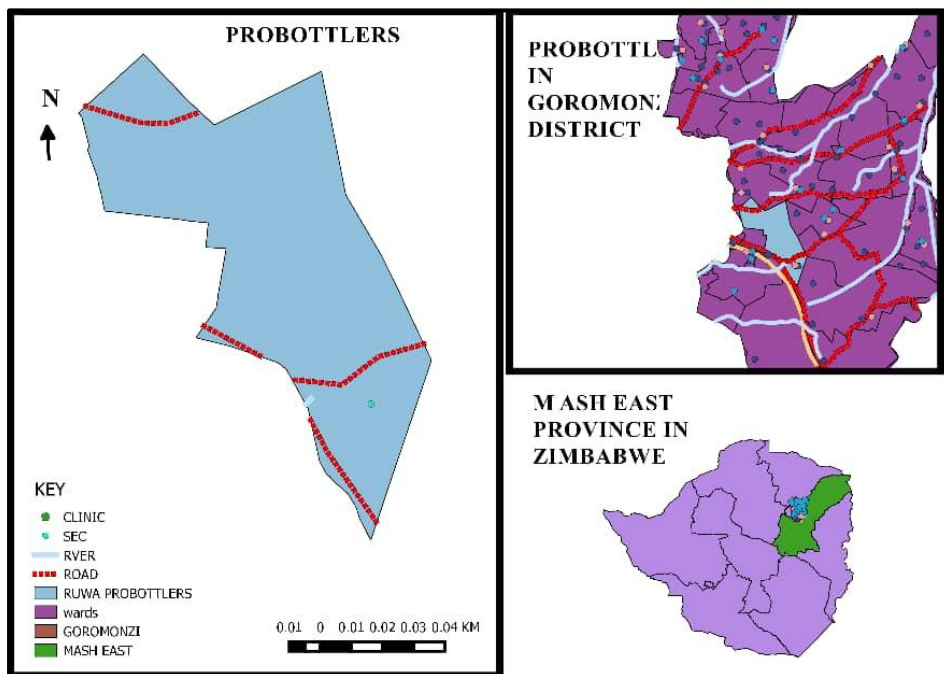


Figure 3.1 PRObottlers location

3.2 Study design

The cross-sectional research design was used. It involves in-depth examination and analysis of the characteristics and dynamics of a specific unit to probe deeply into the unit with the view of establishing generalization about the wide population to which the unit belongs as suggested by Leedy (1980). The convergent triangulation technique, whereby the mixed method aims to collect both quantitative and qualitative data in one segment, analyse them, and then combine, them is adopted (Creswell and Creswell 2018). According to Chako (2017), he asserted that triangulation uses different approaches such that the validity of the data can be increased.

The mixed approach method relates to integration of qualitative and quantitative approaches such that there is full accountability of the research problem (Perdede, 2019). Qualitative methods have the potential to facilitate organizational learning, and reflection enabling the recognition of risks, hazards, and accidents (Kongsvik *et al.*, 2010). The method was employed to widen the credibility and reliability of the data. The quantitative approach based on questionnaires ensured respondents' confidentiality.

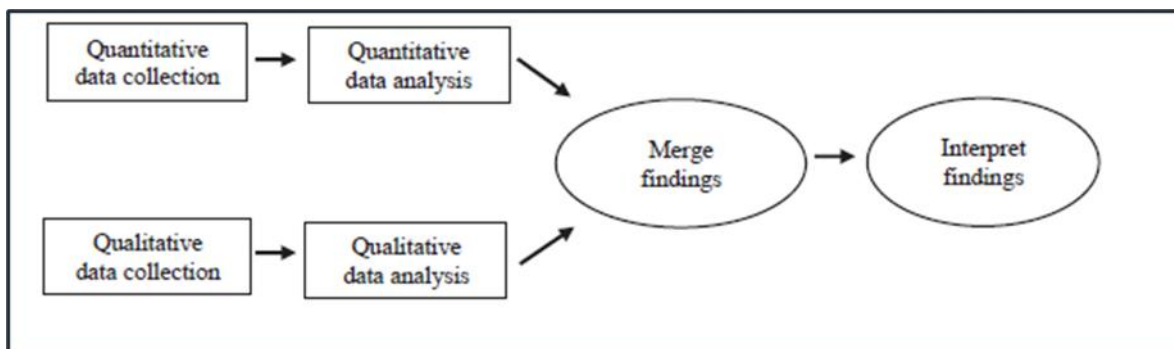


Figure 3.2: Mixed-method convergent design

Source: Creswell and Plano Clark 2018

3.3 Population of study

The population of interest for this study were PRObottlers staff. Therefore, the population comprised of males, and females of all races, age groups, education statuses, and from all the departments within the organization including Production, SHEQ department, and Receiving and Dispatch. The target population comprised 150 people.

3.4 Sample and sampling procedure

3.4.1 Sample size

Sampling refers to a process of selecting representatives from a large group called the population (Etikan & Abubakar, 2017). It involves making decisions regarding which people, settings, activities, processes, and behaviours are to be observed. The sample size to be used is 46. The target population was 150 and a sample size of 30% was selected. This sample of 46 participants was deemed large enough to be statistically significant and representative of the target population in an unbiased manner as suggested by Tabandeh *et al.* (2022). High error margins are a result of a small sample size whereas very large samples are costly and challenging to manage as suggested by Lakens (2022).

3.4.2 Sampling procedure

A convenience selection approach was utilised to select the participants (employees and contractors) to ensure the sample was representative. However, to promote diversity the researcher also used purposive sampling. According to Carter and Little (2017), purposive sampling refers to subjective selection, a non-sampling technique that focuses on specific population characteristics that will enable the researcher to ask questions. It allows an equal chance of the provision of the most relevant and valuable information to succeed in the objectives of the research. It allows the choosing of participants who have direct or significant involvement with OHS management at Probottlers. Participants from all the departments with different levels of expertise and experience had an equal chance to air their views. The researcher selected a sample size of forty-six employees ($n=46$). The forty-six employees will be from five departments (sections) which are SHEQ, Management, Production, Maintenance, and Receiving and Dispatch as presented in the table below:

Table 3.4.2 1-Number of respondents per department

Section of Organisation	Total Population (N)	Sample size at 30% total population (n)
SHEQ	30	9
Management, Supervisors	15	5
Production	50	15
Maintenance	15	5
Receiving and Dispatch	40	12
Total	150	46

3.5 Data sources

To gather the necessary data, the researcher employed a variety of tools, including surveys, questionnaires, in-depth interviews, observations and document reviews.

3.6 Primary data collection methods

3.6.1 In-depth interviews

Interviews were conducted with the individuals who are actively engaged in the maintenance and implementation of OHS management practices at PRObottlers such as the supervisors or managers. The strength of in-depth interviews is that it is a flexible tool and easier to explore complex topics, they also allow additional explanations, variations, and adjustments. In this study, in-depth interviews are of uttermost importance because they give firsthand information as well as exclusive information from the participants.

3.6.2 Survey and Questionnaire

A structured questionnaire was distributed to the participants. The questionnaire used covered a series of questions that could be converted to variable measurable data. It was divided into four parts: demographic information, standardised OHS practices, employee perception of the OHS management system, and effectiveness in preventing accidents (Indirectly through perception). Closed-ended Likert questions intended to apprehend the trends of OHS-related accidents and risks in the manufacturing company. Since the majority of respondents were native English speakers, the questionnaire was administered in English.

3.7 Secondary data

The secondary data sources included Government regulations and standards which provide insights into the minimum requirements and expectations for OHS management. Incident data review at PRObottlers including accident reports, injury records, and food safety incident reports were utilised to supplement and support primary data and to gather quantitative data on accidents, injuries, and near misses. The secondary data was thoroughly examined to uncover complex information about the robustness and integrity of the OHS management system.

3.8 Research Ethics

According to Johnson and Christiansen (2012), research ethics refers to international anticipations that must be followed when one is exploring human subjects. This infers that participants/respondents ought to be treated with dignity and respect and not as objects or tools of the study. Ethical considerations of the investigation were centred on issues of voluntary participation, confidentiality informed consent, and not harming the participants. The participants were debriefed about the research outlining its aims, and how they benefited from the study.

3.8.1 Informed Consent

Participation by subjects was completely voluntary, therefore the researcher employed the ethical consideration of informed consent from the participants to show their willingness to take part in the research. As defined by Grove (1993), informed consent “involves a prospective study participant’s voluntary decision to engage in the research, which is made after they

comprehended key details about the study.” For in-depth interviews informed consent was usually oral that is verbal.

3.8.2 Protection from Harm

According to Ryen (2011), researchers ought to conduct their research without causing harm, be it physical and/or psychological, including potential harms like stress, pain, anxiety, or a negative impact on participants' self-esteem. Participants were encouraged to participate only when they felt safe to do so.

3.8.3 Confidentiality

Protection of participants was considered as some gave exclusive information without omitting anything hence there was the need to protect them from any harm and keep them private creating the need to use pseudonyms. Precautions were implemented to safeguard the anonymity of the participants and prevent their identities from being linked to the data they provided.

3.8.4 Withdrawal

Participants exercised their rights to voluntarily accept or refuse to participate in the research as individual persons, thus they were educated of their right to withdrawal from the investigation at any given stage and also subjected to refuse to answer any of the questions if not appropriate or they felt uncomfortable.

3.9 Data Analysis and Presentation

Thematic analysis was used to analyse qualitative data. According to Joffe (2012), thematic analysis is a technique used to identify and examine recurring themes or patterns of meaning in a dataset. The findings were collected, categorised, and coded to identify different themes by looking at the repeated patterns of responses such as the challenges faced and barriers. Descriptive analysis using the SPSS software version 25 was used to analyse quantitative data as well as the computation of Chi-square test to establish association between the management system and reduction of injuries and accidents. The researcher also used data visualization to present the findings clearly and concisely. Visualization used included bar charts, tables, and time series graphs that helped to illustrate patterns, trends, and relationships within the data.

CHAPTER 4: RESULTS

4.0 Introduction

Results obtained through in-depth interviews, questionnaires, and document analysis are presented. The qualitative data is presented and analysed, covering demographic information as well as thematic findings from participants' responses. The qualitative data is organised and discussed according to the themes that emerge from research participants. This chapter also presented quantitative data, which included demographic results from the participants. The quantitative data analysis is presented using descriptive statistical techniques, including charts and tables.

4.1 Response Rate Analysis

The researcher administered 40 questionnaires and targeted to interview a total of 6 key participants based on the sample size of the study. The results are presented in the Table below.

Table 4.1.1 1- Research response rate

	Frequency	Percentage (%)
Questionnaires administered	40	100%
Questionnaires not returned	5	12.5%
Questionnaires returned	35	87.5%
Returned but incomplete questionnaires	5	12.5%
Returned and fully completed questionnaires	30	75%
Interviews	6	100%

As shown in the above Table; a total of 35 questionnaires were returned, however, 5 questionnaires were partially completed (some had double answers) and thus regarded as spoiled and discarded in analysis. A successful questionnaire response rate of 75% and 100% for interviews was considered good for analysis. Saunders *et al.* (2020) assert that response rates of at least 70% are good and ideal for analysis and concluding the data.

4.2 Data presentation and analysis

4.2.1 Characteristics of Respondents

Table 4.2.1 shows the characteristics of the six participants to the interviews.

Table 4.2.1- Respondents information

Number	Respondent	Gender	Department
1	A	Male	Management
2	B	Female	SHEQ
3	C	Male	Maintenance
4	D	Male	Production
5	E	Female	Receiving and Dispatch
6	F	Male	Management

Table 4.2.1 above shows that there were six participants, all were employed at PRObottlers (Pvt) Ltd. The researcher used letters of the alphabet (A to F) to guarantee the confidentiality and anonymity of the participants.

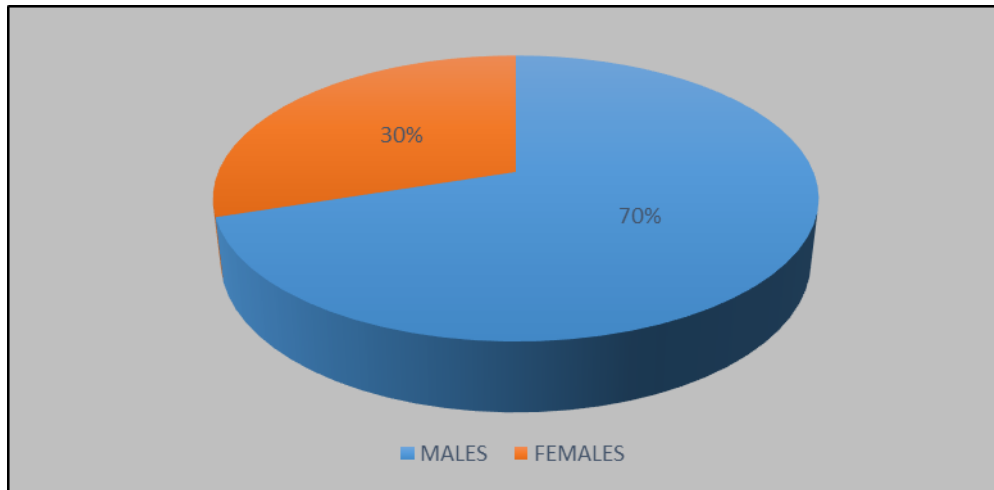


Figure 4.2.1- Classification according to Gender

Based on the presented results in Figure 4.2.1, 70% of the respondents were males indicating that the organisation is male-dominated. Hence the results were in line with the statistics presented by Taderera (2012) and Musungwa and Kowe (2022) which indicated that the beverage industry is male-dominated as it is considered a laborious environment.

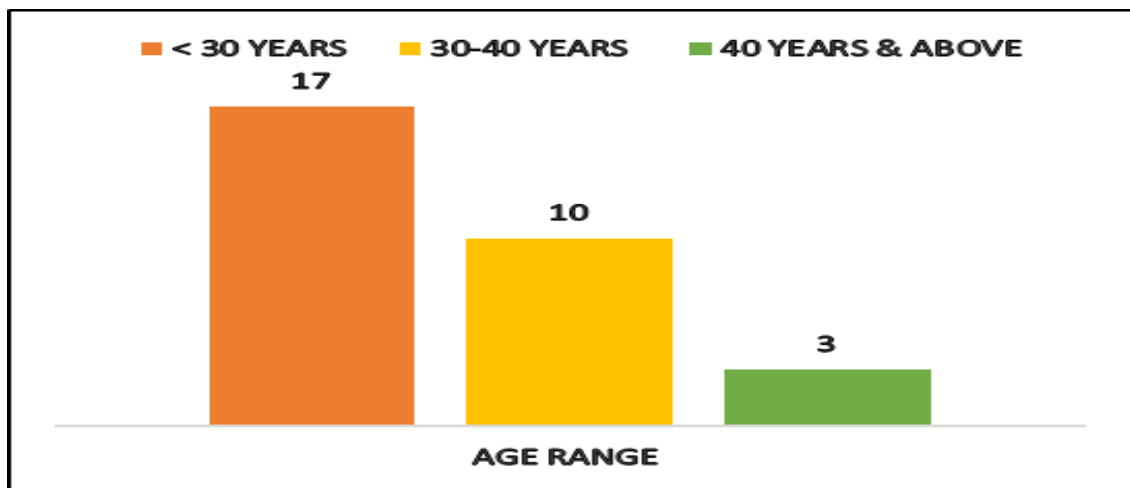


Figure 4.2.2- Classification according to Age

The findings in Figure 4.2.2, the < 30 years' age group was dominant (56.6%) and the elderly were less dominant with 10%.

Table 4.2.2- Academic Qualifications

Academic Qualification	Frequency	Percentage (%)
Certificate	8	26.7
Diploma	8	26.7
Bachelor's degree	10	33.3
Master's degree & Above	4	13.3
Total	30	100.0

From Table 4.2.2, it is evident that most of the research participants were educated implying that they understood and provided relevant responses. However, Table 4.2.3 indicated that 73.3% of the participants had less than 5 years' experience at current working position.

Table 4.2.3- Experience of Respondents

Experience	Frequency	Percentage (%)
Less than 5 Years	22	73.3
5-10 Years	6	20.0
Above 10 Years	2	6.7
Total	30	100.0

4.3 Thematic results from interviews

4.3.1 The overview of the organisational OHS Management System

The majority of respondents are aware of the OHS management system and its components utilised at PRObottlers (Pvt) Ltd. Four of the six selected participants (A, B, D and F) demonstrated extensive knowledge of the system in use, acknowledging that it is based on the ISO 45001:2018 standard, which includes the OHS policy and objectives, risk assessment and management, hazard identification and control, incident reporting and investigation, employee training and awareness, performance measurement, and documentation. One participant pointed out that:

“The organisational OHS management systems at PRObottlers is based on ISO 45001:2018, has key elements such as OHS policy, an organisational structure, employee training, and awareness, etc.” (A).

On the programs or initiatives that are in place to continually improve OHS practices and procedures, participants (A, B, C, D, and F) pointed out that

“Employee training and awareness, regular inspections (risk assessments), and feedback are the main programs used by the company to improve OHS and ensure a safe working environment” (D).

Most participants, however, were able to point out the relevant or specific standards that the organisation adheres to such as the Zimbabwean Labor Act and Regulations, Factories and Works Act and its regulations, as well as the NSSA regulations.

4.3.2 The challenges and barriers to effective OHS management.

When asked if they had any resource-related challenges, such as budget constraints or a lack of specialised personnel that impact the effectiveness of OHS management systems all participants admitted to facing the challenges. The participant pointed out that:

“There are competing priorities and demands such as production and safety in which production is favoured against the safety of personnel.” (A)

Another participant said:

“Safety of all employees is not a priority, there is lack of top management participation which is evidenced by lack of financial support and inadequate PPE.” (B)

Another participant also said:

“The organisation is to seek OHS management system certification for an effective and enhanced OHS management system.” (F)

However, one participant expressed that the management system adoption is effective for the management of OHS in the workplace.

“The organisational management is very effective, and it protects us from being injured, as hazard identification and risk assessments are conducted.” (E)

4.4 Existence of OHS Policy

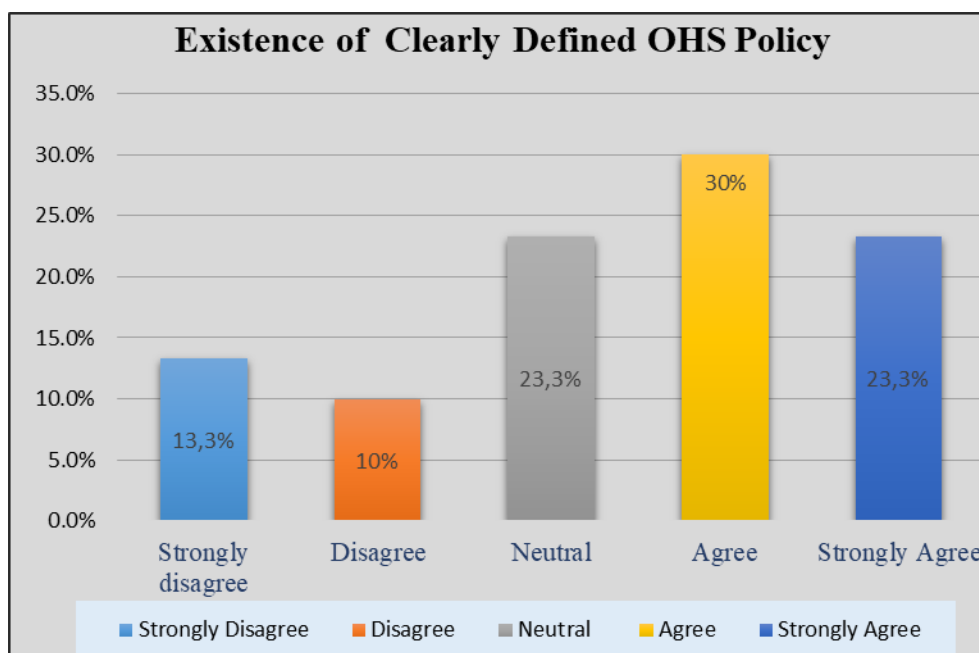


Figure 4.4.1- Frequency of employee knowledge

The results in Figure 4.4.1 show that 30% agreed and 23.3% strongly agreed that the organisation has a clearly defined OHS policy that is accessible to all whilst 23.3% were not sure of the presence or existence of the company policy. Hence majority (53.3%) agreed to the existence of an organisational OHS Policy.

However, the fact that a significant portion (23.3%) were unsure of the existence of the OHS policy indicates that there may be room for improvement in terms of policy communication and employee awareness.

Table 4.4.2 2- Existence of OHS Management System (Components)

To determine employee knowledge of the state of the OHS management system	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PRObottlers (Pvt) Ltd conducts regular risk assessments to identify potential hazards in different work areas.	6.7%	13.3%	36.7%	26.7%	16.6%
Employees receive ongoing training specific to their roles and the potential safety risks associated with their tasks	10%	0%	30%	43.3%	16.7%
Employees are aware of the clear and accessible procedures for reporting work-related accidents and injuries.	10%	16.7%	23.3%	26.7%	23.3%

The results in Table 4.4.2 2 indicates that the majority of the participants (36.7%) were not sure if the organisation conducts regular risk assessments to identify potential hazards in the different work areas. This finding indicates that there may be absence of transparency or communication regarding the risk assessment process within the organisation.

Secondly, the results show that 43.3% of the partakers agreed that the employees receive ongoing training specific to their roles and potential safety risks associated with their tasks. This indicates that the organisation has made efforts to provide role-specific OHS training to its workforce, which is an essential element of an effective OHS management system.

Thirdly, the findings reveal that 26.7% of participants agreed that the employees are aware of the clear and accessible procedures for reporting work-related accidents and injuries whilst 23.3% strongly agreed and 23.3% were not sure of the accident reporting procedures. These results highlight the need for the organisation to further strengthen its communication and employee awareness regarding accident and injury reporting processes. Robust incident reporting systems are a key component of an effective OHS management system, as they enable the organization to identify and address safety issues as indicated by Fernández-Muñoz *et al.*, (2012).

4.5 Barriers and Challenges to effective OHS Management System

Table 4.5 1- Barriers and Challenges

Barriers and challenges to effective OHS management system	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Non-top management participation	0 %	33.3%	16.7%	50%	0%
Lack of financial support	0%	0%	16.7%	33.3%	50%
Resistance and ignorance	0%	0%	33.3%	33.3%	33.3%
Inadequate training	0%	0%	33.3%	0%	66.7%
Lack of specialised personnel	0%	0%	0%	0%	100%
Competing priorities and demand	0%	0%	33.3%	%	66.7%

The results in Table 4.5 indicate that 50% agreed that non-top management participation was among the barriers and challenges to an effective OHS management system. Lack of top management participation may undermine the prioritisation of OHS and limit resources and attention devoted to the OHS management system.

Additionally, 50% strongly agreed lack of financial support was a challenge to an effective OHS management system. Adequate financial resources are essential for organizations to invest in safety equipment, training programs, and other necessary OHS-related initiatives. The limited availability of financial resources can hinder the organization's ability to sustain a robust OHS management system.

As represented 33.3% agreed and 33.3%strongly agreed that resistance to change is a barrier and challenge to an effective OHS management system. In addition, 66.7% of the respondents strongly agreed that inadequate training inhibits the effectiveness of the OHS management system.

Moreover, 100% of the participants asserted that the lack of specialised personnel was a barrier and challenge to an effective OHS management system. This concurred with the interview response where one participant indicated that:

“We are facing a challenge in executing our occupational health, safety, and environmental responsibilities due to SHE staff shortage, there is a need to employ additional SHE personnel to cater for the health and safety of the employees.” (B)

In addition, 66.7% strongly agreed that competing priorities and demands challenged the effectiveness of the OHS management system. These survey results were complemented by the findings from the interviews and document review.

Overall, the findings highlight the nature of the barriers and challenges that can impede the effectiveness of the OHS management system, financial, human resource, and operational aspects. Hence addressing these challenges through targeted interventions and strategies can help the organisation enhance the effectiveness of the system and overall safety and health outcomes.

4.6 Effectiveness of the system in preventing accidents and injuries

The trends below show a rise in the number of accidents recorded over the years (before adoption as well as after adoption) of the OHS management system (ISO 45001:2018). This is consistent with research that found the implementation of an OHS management system does not always lead to an immediate reduction in workplace accidents and injuries (Robson *et al.*, 2007; Fernández-Muñoz *et al.*, 2012). However, there

is a variation in the 3rd quarter injury trends as a decline in injuries and accidents is seen (2022) and in the 2nd quarter of 2023, this may be due to reduced shift work as most beverage companies tend to operate less than full capacity during the winter season.

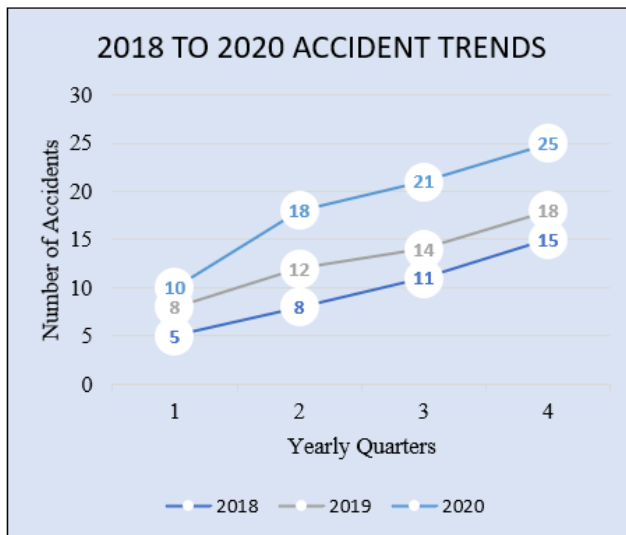


Figure 4.6 1- Trends before Adoption

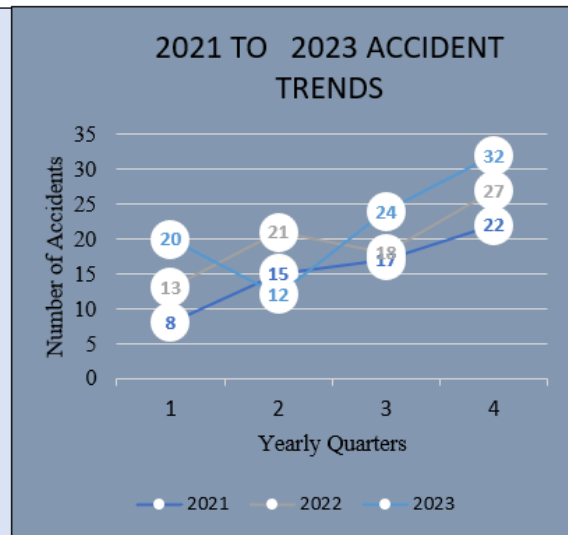


Figure 4.6 2- Trends After Adoption

The effectiveness of the organisational OHS management system is measured by the number (frequency) of work-related accidents and injuries recorded over some time. The research findings show that there is no difference in the accident and injury frequency between the period of adoption and non-adoption of the OHSMS (ISO 45001:2018). This may be a result of increasing production lines and quantity leading to greater exposure to hazards, understaffing, or lack of financial support. Limited top management commitment, prioritising production quantities over the safety of employees, poor maintenance of machines, and long-shift-work challenges hinder the effectiveness of the system in preventing accidents in the workplace as observed within the organisation from the document review of accident registers, interviews and SHE Reports

Lead indicators used to assess the effectiveness of the organisational OHS management system in preventing accidents and injuries such as the effectiveness of key elements which include management commitment and leadership, employee training and competency, hazard identification, and risk assessment, and emergency preparedness and response.

4.6.1 Management commitment and leadership

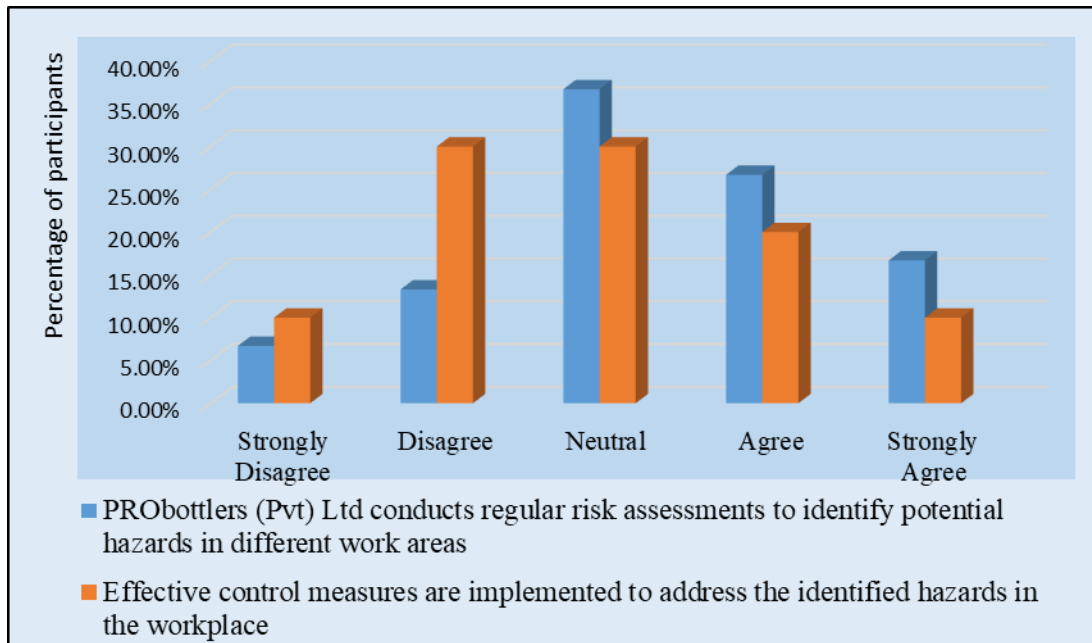


Figure 4.6.1 1- Management and Leadership

The findings show that the majority of employees believe management does not display a visible commitment to workplace safety through their actions and words, as indicated by 16.70% of participants saying that it is not a challenge. 10% of participants agreed that there is a clear system in place to keep managers accountable for upholding safety standards in their departments, and that "*when safety concerns are raised, management takes them seriously and addresses them promptly.*" The majority of participants (26.70%) expressed uncertainty. However, 36.70% identified this as an issue within the firm. Hence it affects the overall effectiveness of the system in preventing accidents and injuries.

4.6.2 Hazard identification and risk assessment

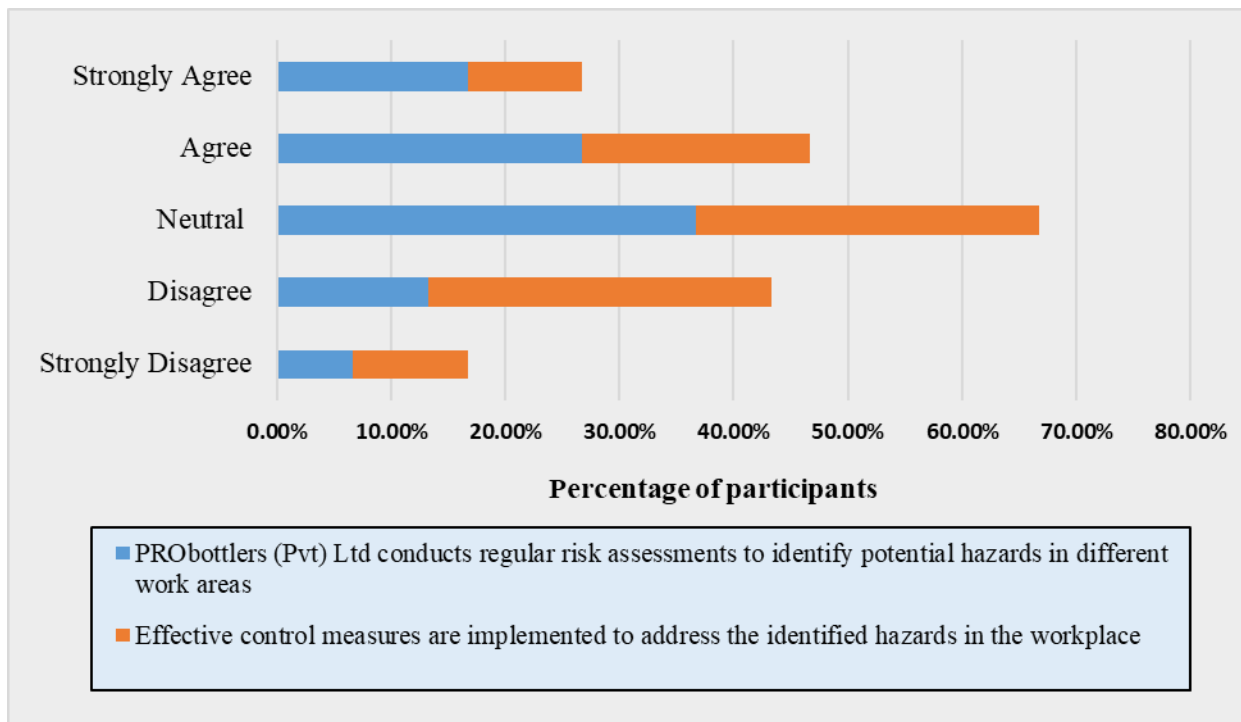


Figure 4.6.2.1- Hazard Identification and Risk Assessment

The majority of participants argued that regular risk assessments are undertaken to detect potential risks in different work areas, with 26.7% agreeing and 16.7% strongly agreeing, while 36.7% were unsure. When asked if effective control measures were adopted to address the highlighted hazards, many individuals disagreed, with 10% strongly disagreeing, 30% strongly disagreeing, and 30% unsure whether the measures were implemented.

4.6.3 Overall effectiveness of the OHSM system in accident and injury reduction

Lastly, respondents were asked to rate the effectiveness of the OHSM system in preventing and reducing accidents and injuries. The results are displayed in Figure 4.6.3.1.

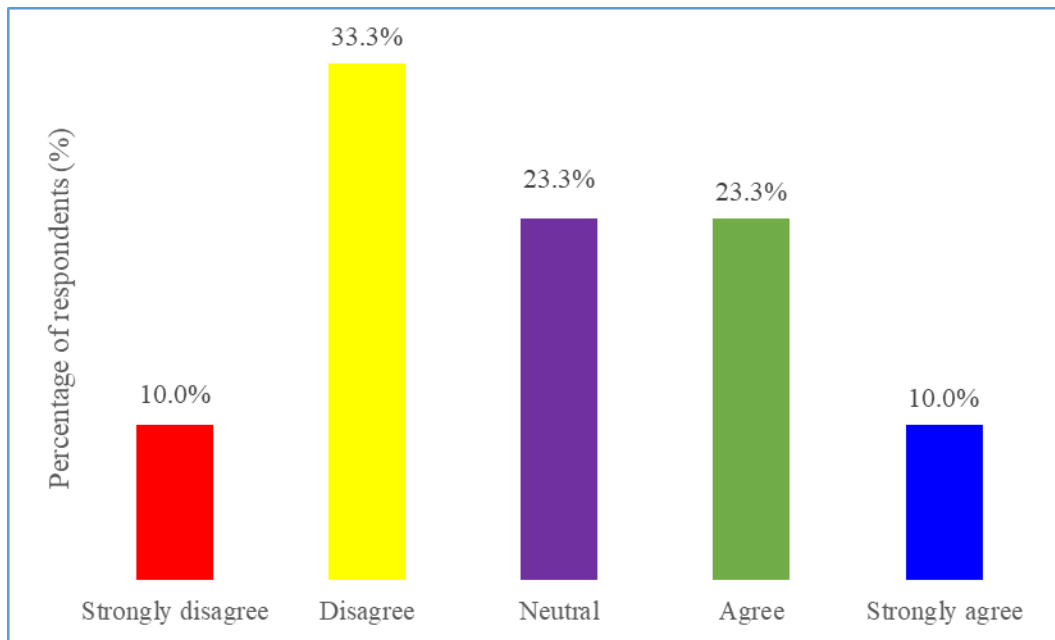


Figure 4.6.3.1- Overall effectiveness of the OHSM system in accident and injury reduction

The results in Figure 4.6.3.1 show that the respondents had mixed feelings where 33.3% disagreed whilst 23.3% were neutral and 23.3% agreed that the OHMS system at PRObottlers was effective. The results show that the OMHS system was ineffective as also confirmed by the Chi-square results presented in Table 4.6.3.1.

Table 4.6.3.1 Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	62.278 ^a	16	.154
Likelihood Ratio	53.043	16	.100
Linear-by-Linear Association	23.552	1	.110
N of Valid Cases	30		

The results in Table 4.6.3.1 show a Chi-square statistic of 62.278 and a p-value of 0.154 which is statistically insignificant at 5% level. The results show that the OMHS system was ineffective in reducing and preventing accidents and injuries. The study therefore failed to reject the hypothesis that PRObottlers' OHS management system is ineffective in reducing and preventing work-related injuries and accidents.

4.7 Chapter Summary

The findings from the questionnaire and interviews as well as findings from secondary data were presented, analysed and interpreted. The succeeding chapter provides the discussion of the research findings.

CHAPTER 5: DISCUSSION

5.0 Introduction

The results presented in the previous chapter are discussed in this chapter. The purpose of the discussion is to explain the meaning of the findings relating them to literature. The discussion is presented according to the objectives of the study. The empirical and theoretical literature reviewed in Chapter 2 is used in this study to discuss the research findings.

5.1 The overview of the organisational OHS Management System

The study established the current state of the OHS Management System at PRObottlers. The study also found that employees were aware of the OHS management system and its components. This was consistent with the study done by Shabani *et al.* (2024) which also established awareness of the existence of OHS management system. The findings also suggest that the organisation has made efforts to establish and communicate an OHS Policy, which is an important component of an effective OHS management system. The results align with previous research where Campanelli *et al.* (2021) asserted that the formulation and implementation of OHS policies by organisations is a way of committing to safety, health, and environmental aspects. Fernández-Muñiz *et al.* (2012), indicated that the presence of a clearly defined and accessible OHS policy can establish a framework for managing and improving occupational safety and health within the organisation.

Similar to the present findings, Klimecka-Tatar and Niciejewska (2016) also asserted that effective risk assessment is a crucial component of an OHS management system as it enables the identification and mitigation of potential safety and health risks. The findings also indicated that the organisation (PRObottlers) has made efforts to provide role-specific OHS training to its workforce, which is an essential element of an effective OHS management system as also argued by Vinodkumar and Bhasi (2010). The findings on awareness of the OHS management system also highlighted the need for the organisation (PRObottlers) to further strengthen its communication and employee awareness regarding accident and injury reporting processes. Robust incident reporting systems are a key component of an effective OHS management system, as they enable the organization to identify and address safety issues as also indicated

by Fernández-Muñiz *et al.* (2012). The findings are in line with those obtained by Klimecka-Tatar and Nicijewska (2016), who suggested that OHSMS ought to consist of the following elements namely policies, organisational structure, and risk assessments. The results indicate that the organisation has made progress in some areas but there are also opportunities for improvements to enhance the overall effectiveness of the OHS management system.

5.2 The challenges and barriers to effective OHS management

The study also established several challenges and barriers to effective OHS management. The challenges were found to include non-top management participation, lack of financial support, resistance and ignorance, inadequate training, lack of specialised personnel and competing priorities and demand. The findings are consistent with the findings from existing literature. For instance, the findings that lack of top management participation also undermine the prioritisation of OHS and limit resources and attention devoted to the OHS management system aligns with the findings by Tapa and Celik (2017) who emphasised the critical role of management commitment and leadership support in the successful maintenance and implementation of OHS practices. The findings also correspond with the Sociotechnical framework also highlight challenges such as poor leadership practices and resource constraints in OHS management systems.

Additionally, lack of financial support was also supported by Amponsah-Tawiah and Dartey-Baah (2011) who stated that limited availability of financial resources can hinder the organization's ability to sustain a robust OHS management system. Cagno *et al.* (2020) also found that resistance to change and lack of specialised personnel was a barrier and challenge to an effective OHS management system. Similar to this research, Musungwa and Kowe (2022) also indicated that the barriers and challenges to the effective operationalisation OHS management system at Delta Beverages included inadequate financial resources, non-top management participation, and inexperienced personnel.

5.3 Effectiveness of the system in preventing accidents and injuries

The findings showed that the existing OHS management system (ISO 45001:2018) at the PRObottlers was not effective in preventing accidents and injuries. The findings are consistent with previous researches which found the implementation of an OHS management system does not always lead to an immediate reduction in

workplace accidents and injuries (Crandall et al., 2013; Robson *et al.*, 2007; Fernández-Muñiz *et al.*, 2012).

However, the present findings contradict the previous research by Musungwa and Kowe (2022) which found OHSMS to be effective in minimising accidents and injuries. This may be a result of increasing production lines and quantity leading to greater exposure to hazards, understaffing, or lack of financial support. Contrastingly, the research conducted by Amponsah-Tawiah and Dartey-Baah (2011) also found that the implementation of OHS management systems resulted in a decrease in the risk of work-related accidents. In addition, Zubar *et al.* (2016) also found that OHSMS can be effective in reducing occupational hazards in most industries and enterprises. However, as argued by Vinodkumar and Bhasi (2010), the effectiveness of OHS management systems can be prejudiced by various contextual issues, such as organizational culture, worker engagement, and resource availability).

5.4 Chapter Summary

The chapter provided the discussion of the findings where the present findings were linked to existing literature and theories. The succeeding chapter provides the summary of the research focusing on the recommendations and conclusions.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

The study assessed the effectiveness of organisational occupational health and safety (OHS) management system in the beverage industry in Zimbabwe, using PRObottlers (Pvt) Ltd as a case study. The research established that PRObottlers adopted the ISO 45001:2018 system which supports OHS objectives and targets to help in accident prevention. The findings revealed that while the organisation adopted the system, its overall effectiveness was hindered by various factors, such as insufficient management assurance of OHS practices, understaffing, ignorance and resistance, lack of financial support, and inadequate training. Hence the findings highlighted that the system did not lead to a substantial decrease in the frequency of workplace accidents and injuries thus the need for a comprehensive and proactive approach to OHS management as the current system appears to have significant room for improvement.

Moreover, the findings from this research will contribute to valuable insights to improve OHS practices within the beverage industry by addressing the identified knowledge gaps, challenges, barriers, and opportunities for improvement. PRObottlers can create a safer, healthier, and more productive work environment. Hence this study paves the way for future research on OHS management systems. Future studies could explore, the influence of management commitment on safety culture within organisations and the efficiency of interventions to improve employee knowledge and engagement in OHS programs hence stakeholders can gain a comprehensive understanding of how to optimise OHS practices within the beverage industry and reduce accidents and injuries.

6.2 Recommendations

6.2.1 Employee Knowledge and Engagement

- It was shown that employee knowledge and engagement are biased towards OHS management systems. Hence the study, recommends the organisation should develop and implement comprehensive OHS training programs for employees at all levels. (Capacity building)

- The study also recommends that the organisation should regularly communicate and teach the employees about the OHS policies, procedures, and performance metrics to keep employees engaged and informed since some employees were not aware of the existence of the policies, procedures, performance metrics, and not assume since it they are displayed.
- The study also recommends the organisation foster a culture of safety by encouraging open communication with the employees.

6.2.2 Addressing challenges and barriers

- The organisation should allocate sufficient resources towards OHS initiatives including investing in adequate PPE, safety equipment, maintenance, and qualified OHS personnel
- The study recommends that the organisation should conduct regular OHS audits to proactively identify and address OHS potential hazards, non-conformities, and challenges
- In addition, the study also recommends the organisation be certified as that enhances the performance of the OHS management system since the organisation only adopted the ISO 45001:2018 system.
- The study also recommends the organisation benchmark OHS performance against industry best practices and regulatory requirements.

6.3 Areas for Further Study

The study recommends for further studies to be carried out using larger sample sizes to enhance validity and generalisability of findings. The study also recommends for further studies to be carried out using several case studies from the beverage industry.

REFERENCES

- Autenrieth, D. A., Brazile, W. J., Sandfort, D. R., Douphrate, D. I., Román-Muñiz, I. N., & Reynolds, S. J. (2016). The associations between occupational health and safety management system programming level and prior injury and illness rates in the US dairy industry. *Safety Science*, 84, 108–116. [https:// doi.org/10.1016/j.ssci.2015.12.008](https://doi.org/10.1016/j.ssci.2015.12.008)
- Boughaba, A., Hassane, C., & Roukia, O. (2014). Safety culture assessment in petrochemical industry: A comparative study of two Algerian plants. *Safety and health at work*, 5(2), 60-65.
- Carter, S. M., & Little, M. (2017). Justifying knowledge, justifying method, taking action: Epistemologies, methodologies, and methods in qualitative research. *Qualitative Health Research*, 17(1), 1316–1328.
- Chako, T. (2017). Triangulation in qualitative research! Why the use of triangulation necessary. *Triangulation in Social Research*. Harare.
- Creswell, J., & Plano Clark, V. (2018). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage Publications Inc.
- Creswell, J., & Creswell, J. (2018). *Research design: Qualitative, quantitative and mixed methods approach*. Los Angeles, CA: SAGE.
- Etikan, Í., & Abubakar, S. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, 5(6), 1–3.
- FAO (2020), *FAO Guide to Ranking Food Safety Risks at the National Level*, Food and Agriculture Organization of the United Nations, Rome.
- FAO Press release on Evaluation of Codex Alimentarius, (2002).<http://www.who.int/fsf/Codexreview2/index3.htm> .
- Fernandez-Muniz, B., Montes-Peon, J & Vazquez-Ordas, C. (2011). Occupational risk management under OSHAS 18001 Standard: analysis of perception and attitudes of certified firms. (<https://doi.org/10.1016/j.jclepro.2011.11.008>)

FoodDrink Europe, (2018). Data & trends EU food and drink industry 2017. Food Drink Eur, 1-25

ISO 22000:2018. <<https://www.iso.org/standard/35466.html>> .

ISO. (2018b). Management System Standards. Retrieved August 11, 2021, from <https://www.iso.org/management-system-standards.html>

Joffe, H. (2012). Qualitative Research Methods in Mental Health and Psychotherapy: A Guide for Students and Practitioners. (D. Harper & A. Thompson, Eds.). Chichester: Wiley-Blackwell.

Julien, D., & Mensah, L. D. (2011). ‘Implementation of food safety management systems in the UK Implementation of food safety management systems in the UK. Food Control, 22(8), 1216–1225. <https://doi.org/10.1016/j.foodcont.2011.01.021> 4–93.

Kongsvik, T., Almklov, P., & Fenstad, J. (2010). Organisational safety indicators: Some conceptual considerations and a supplementary qualitative approach. Safety Science, 48(10), 1402–1411. <https://doi.org/10.1016/j.ssci.2010.05.016>

Lakens, D. (2022). Sample size justification. Collabra: Psychology, 8(1), 33267. <https://doi.org/10.1525/collabra.33267>

Leitão, S., & Greiner, B. A. (2016). Organisational safety climate and occupational accidents and injuries: An epidemiology-based systematic review. Work and Stress, 30(1), 71–90. <https://doi.org/10.1080/02678373.2015.1102176>

Macheka, L., Manditsera, F., Ngadze, R., Mubaiwa, J., & Nyanga, L. (2013). Barriers, benefits, and motivation factors for the implementation of a food safety management system in the food sector in Harare Province, Zimbabwe. Food Control, 34, 126–131. <https://doi.org/10.1016/j.foodcont.2013.04.019>

Mohammadfam, I., Kamalinia, M., Momeni, M., Golmohammadi, R., Hamidi, Y., & Soltanian, A. (2017). Evaluation of the quality of occupational health and safety management systems based on key performance indicators in certified organizations. Safety and Health at Work, 8(2), 156–161. doi.org/10.1016/j.shaw.2016.09.001

Mrema, E. J., Ngowi, A. V., & Mamuya, S. H. D. (2015). Status of occupational health and safety and related challenges in expanding economy of Tanzania. *Annals of Global Health*, 81(4), 538–547. doi.org/10.1016/j.aogh.2015.08.021

Musungwa, T., Kowe, P (2022). Effects of occupational health and safety management systems implementation in accident prevention at a Harare beverage company.

<https://doi.org/10.1080/23311916.2022.2124638>

National Social Security Authority Statistical Report, (2021)

Pswarayi, F. et al. (2014) ‘Food control in Zimbabwe: A situational analysis Food control in Zimbabwe: A situational analysis’, *Food Control*, 46(October 2019), pp. 143–151. https://doi: 10.1016/j.foodcont.2014.05.013.

Ryen, A. (2011). Ethics and qualitative research. *Qualitative Research*, 3(1), 238–416.

Santos, G., Barros, S., & Mendes F., (2012). The main benefits associated with health and safety management systems certification in Portuguese small and medium enterprises post quality management certification. <https://doi.org/10.1016/j.ssci.2012.06.014>

Shabani, T., Jerie, S., & Shabani, T. (2024). Overview of quality health safety and environmental management systems implementation in Zimbabwe. *Safety in Extreme Environments*, 6(1), 29-41.

Sklad, A. (2019). Assessment of the impact of the process on the occupational safety and health management system's effectiveness using the fuzzy cognitive map approach. *Safety Science*, 117, 71-80.

Sousa, V., Almeida, N. M., & Dias, L. A. (2014). Risk-based management of occupational safety and health in the construction industry- Part 1

Tabandeh, A., Jia, G., & Gardoni, P. (2022). A review and assessment of importance sampling methods for reliability analysis. *Structural Safety*, 97, 102216.

<https://doi.org/10.1016/j.strusafe.2022.102216>

Tapa, A., & Celik, M. (2017). The impact of management commitment to safety on safety climate in container shipping. *Safety and health at work*, 8(1), 49-56

Vinodkumar, M. N., & Bhasi, M. (2010). Safety management practices and safety behaviour: Assessing the mediating role of safety knowledge and motivation. *Accident Analysis & Prevention*, 42(6), 2082-2093.

Yoon, S. J., Lin, H. K., Chen, G., Yi, S., Choi, J., & Rui, Z. (2013). Effect of occupational health and safety management system on work-related accident rate and differences of occupational health and safety management system awareness between managers in South Korea's construction industry. *Safety and Health at Work*, 4(4), 201–220. <https://doi.org/10.1016/j.shaw.2013.10.002>

Yusuf, M., Anis, E., & Sari, O. (2012). The influence of occupational safety and health on performance with job satisfaction as intervening variables (Study on the production employees in PT

APPENDICES

APPENDIX 1: AUTHORISATION LETTER FROM PRObottlers



Authorization letter
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APPENDIX 2: QUESTIONNAIRE



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APPENDIX 3: INTERVIEW GUIDE



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